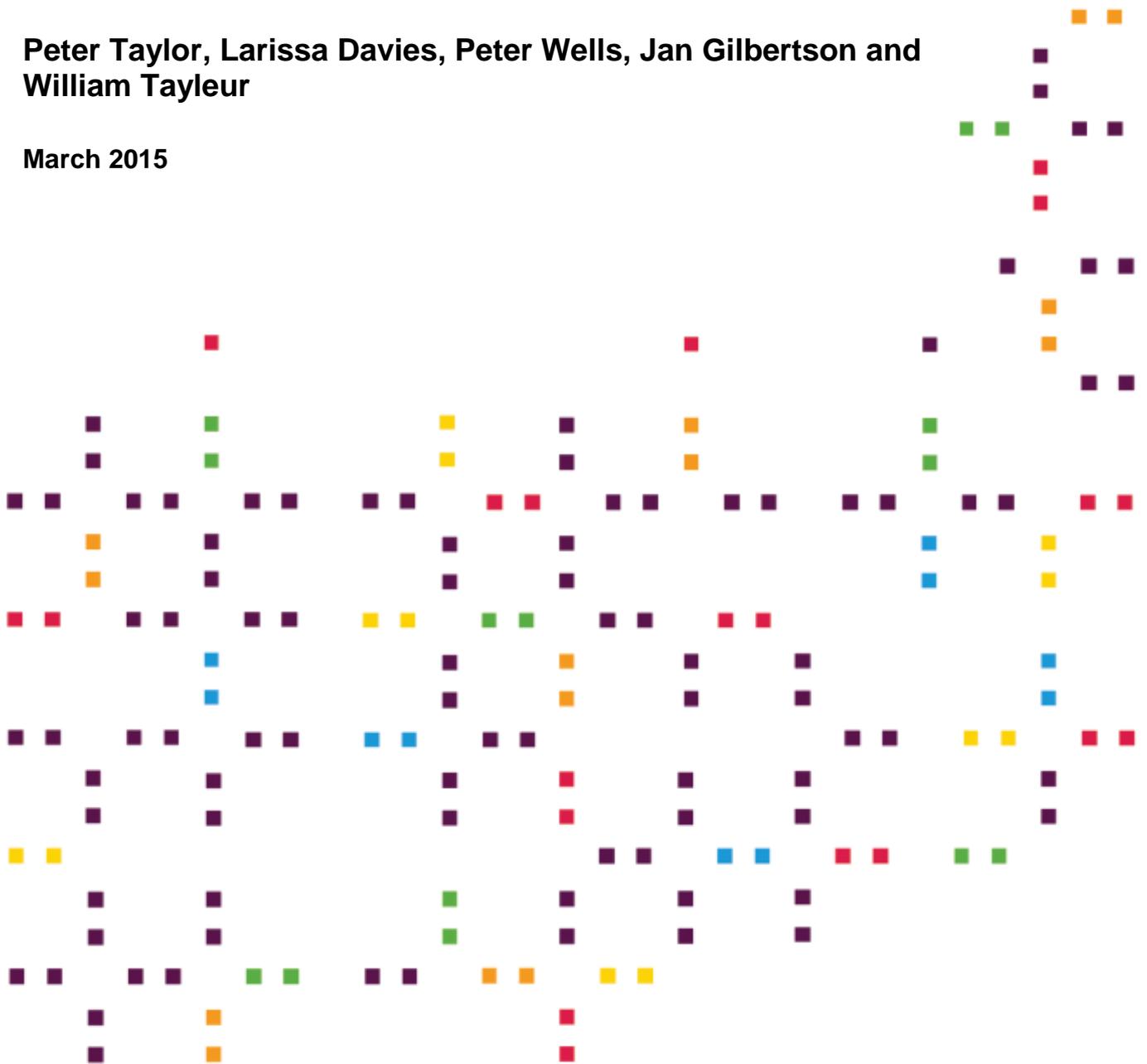


A review of the Social Impacts of Culture and Sport

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The Culture and Sport Evidence (CASE) programme is a joint programme of strategic research led by the Department for Culture, Media and Sport (DCMS) in collaboration with the Arts Council England (ACE), English Heritage (EH) and Sport England (SE).

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Executive Summary

This research, funded from the Culture and Sport Evidence (CASE) programme, reviews the current evidence base on the social impacts of sport and culture. Using a systematic review of relevant literature, this research focuses principally on four main types of social impact: (i) improved health, (ii) reduced crime, (iii) increased social capital and (iv) improved education outcomes. In addition, links to subjective wellbeing (SWB) are examined; and a category 'multiple social impacts' reports on literature where more than one social impact is considered.

Sport

Sport might be seen to have 'turned a corner' from the previous state which was criticised by many academics as being under-researched. The most convincing evidence concerns health benefits, which prevent or reduce physical and mental health problems and save on health care costs. There are some negative health effects from sports injuries, typically for younger people, but in comparison the positive health benefits from sport are more substantial, population-wide and particularly important to older people.

There is also strong evidence that sports participation improves pro-social behaviour and reduces crime and anti-social behaviour, particularly for young men. This includes evidence of lower levels, for sports participants compared with non-participants, of recidivism, drunk driving, use of illegal drugs, crime and suspensions at school, property crime, shoplifting and juvenile crime. The main exceptions to this positive evidence are an association of sport with increased violence and illegal (NB underage) alcohol consumption.

In terms of the social capital impacts from sport, there is evidence that sport is a type of 'social glue', i.e. contributing 'bonding' capital by increasing social connectedness and a sense of belonging. Positive outcomes in studies include reduced social and ethnic tensions, and more collective action and community involvement through sport, particularly volunteering. The evidence doesn't just point to positive social capital impacts from sport - for example, two studies identify cases of sports clubs reinforcing social exclusion.

There is considerable evidence of the positive impact of sport and exercise on educational outcomes, although much of this evidence is from the USA. Through psychological benefits such as enhanced self-esteem and self-confidence, and cognitive benefits such as concentration and thinking skills, sport has positive effects on a number of final outcomes, including educational behaviour and attainment. There are a few contrasting studies which identify negative effects of sports participation on the educational attainment of specific groups of students.

Some studies suggest that sport achieves a number of impacts simultaneously, making it a highly cost-effective intervention. Many of the links between sport and different social impacts are common, including greater physical competencies, better cognitive skills, better social skills, trust and reciprocity, and identification with social values. These help to counteract risk factors and stimulate favourable reaction to protective factors.

Wellbeing is the manifestation of the catalytic role that sport plays in stimulating social impacts. There is evidence of a positive relationship between sport participation and SWB. Wellbeing is connected particularly to health, especially mental health; but also education, social capital and less anti-social behaviour.

The Arts

The evidence points to positive associations between participation in arts and health, social capital, crime and education. The evidence of beneficial effects of the arts on health extends to clinical and non-clinical populations, and physical and mental health. A number of studies evidence the health benefits of music, both for the general population and for stroke victims.

Most of the research into the relationship between the arts and crime focuses on the effects of arts programmes for offenders. The evidence in such studies testifies to beneficial effects on intermediate outcomes such as communication skills, teamwork and self concepts, which are important antecedents for a reduced likelihood of re-offending. Evidence of actual reductions in offending as a result of arts participation is much less prevalent.

The best evidenced relationship between arts participation and social impacts relates to social capital, including a number of studies which focus on young people. Studies in general testify that cultural participation can contribute to social relationships, community cohesion, and/or make communities feel safer and stronger. A majority of studies also supports positive links between arts participation and social inclusion, suggesting that cultural participation results in an improved capacity for cultural citizenship, boosting confidence and developing social skills which lead to more effective engagement with the community at large.

Evidence of the relationship between arts participation and education impacts shows positive effects on intermediate outcomes (e.g. self concepts, improved relationships between staff, students and parents) but less evidence links arts participation to final outcomes (NB education attainment).

Several studies report correlations between arts activity and a range of social impact related outcomes, such as attitudinal change, civic engagement, academic performance and professional development.

Heritage

Heritage and MLA are lagging considerably behind the other sectors in both the quantity and quality of evidence on their social impacts. They are particularly deficient in hard evidence, with many of the studies either reviewing the potential of these sectors for delivering social impacts, or assessing intermediate rather than final outcomes.

Two areas of social impact are identified in relation to heritage - social capital and multiple impacts. One study demonstrates that a historic built environment has a significant and positive relationship with social capital for adults. Another study uses a cross section survey to show that participation in Heritage Lottery Fund projects helps to maintain and deepen the skills, knowledge and social networks of volunteers and to increase their sense of belonging to their local communities.

Museums, libraries and archives

For social capital, education and wellbeing impacts, the Museums, Libraries and Archives (MLA) literature is more aspirational than evidential, with many references identifying the sector's potential for social impacts, via MLA professionals' perceptions, but few providing empirical analysis of the sector's contribution to social impacts.

The most obvious way in which MLA promotes social capital is through the use of volunteers. The literature on the relationship between MLA and wellbeing is confined to one advocacy study and two positive studies of a particular form of therapy using books and poetry - bibliotherapy.

1. Introduction

Sport and culture are widely perceived to generate social impacts. There is a long history of academic and evaluation research into the social impacts of sport and culture, including extensive studies into the social impacts of outdoor recreation amenities in the USA from the 1960s onwards; Dept. of Environment funded studies on leisure and the quality of life (QOL) in the 1970s; SSRC/Sports Council funded *Rationale for Public Sector Investment in Leisure* (Coalter, Long & Duffield, 1986); and *The Benefits Catalogue*, produced in Canada in 1992 and now rebranded as *The National Benefits Hub* (<http://lin.ca/benefits-catalogue>). This evidence includes individual impacts (e.g. health/fitness, mental health and wellbeing), life satisfaction, cognitive development, social skills; and broader community impacts such as social capital, increased volunteering, improved community cohesion, perceptions of quality of local area, increased educational performance, reduced crime/re-offending, reduced health care needs and economic development/regeneration.

While there is an intuitive recognition that sport and culture provide social impacts and a substantial history of literature on this, attempts at measuring and valuing these impacts have often been context-specific - i.e. for specific amenities or initiatives/programmes in specific locations - and lacking a policy purpose. Furthermore, there has been regular criticism by academic experts of the quantity and quality of evidence of the relationship between sport, culture and social impacts. In times of economic constraint there is a need to present a robust case for government funding and investment in the sport and culture sector. This research reviews the current evidence base on the social impacts of sport and culture, identifying what these look like for each sector. The research is funded from the Culture and Sport Evidence (CASE) programme, with a steering group from the CASE Board comprised of representatives from DCMS, Sport England, English Heritage and Arts Council England (ACE). The research develops the understanding of social impacts for the CASE partner organisations. It complements current research into the value of social and wellbeing impacts of cultural engagement and sport participation, being conducted for DCMS (see sport and wellbeing section 3.3.4).

1.1 Scope and Definitions

The scope of this research is defined by the following key phrases.

1.1.1 Social benefits and costs

This study adopts standard economics definitions of social benefits and costs, which taken together are often termed social impacts. This means including effects which are non-market - i.e. not traded for money. And it means including all benefits and costs which affect someone other than the direct beneficiary, e.g. through externalities, public goods, merit goods - which typically include:

- changes in health care costs, derived from health changes of individuals;
- changes in criminal justice system costs, derived from changes in crime and anti-social behaviour and in prosocial behaviour and citizenship;
- the value of changes in human capital and productivity for society, derived from education changes for individuals;

- the value of changes in social capital, derived from bonding, bridging and linkage capital changes, and changes in volunteering;
- the value of combined social impacts, i.e. combinations of the above, or broad measures of externalities and public/merit good impacts.

In each of these cases we include studies of negative effects as well as positive. Negative effects might include, for example, sports injuries, increased aggression and violence by specific sports' participants, and social exclusion by some sports clubs or cultural activities.

Many studies measure the effects of sport and culture on individuals who directly benefit from participation. These are included because they represent the first step in identifying the social impacts derived from engagement in these activities. Fewer studies identify the changes to social impacts consequent upon the effects on individuals. Fewer still attempt to value the changes to social impacts.

Because the remit of the study requires it, we include studies of the effects of sport and culture on SWB, although this relates principally to individual impacts without any necessary social consequences. The study is required to make links between social impacts and wellbeing - hence the inclusion of the latter in the reporting.

1.1.2 Sport and culture

Sport is a broad and vague term that includes a wide range of activities. For the purposes of this research, we include any forms of sport and formal exercise identified in the literature, which for example in some studies includes physical education and in others includes dance activities. We exclude other forms of physical activity, such as walking or cycling to work, taking the stairs rather than the lift, gardening, etc., when they are clearly not related to sport or formal exercise. We are guided by the definition of sport adopted in the Taking Part Survey (DCMS) (<https://www.gov.uk/government/organisations/department-for-culture-media-sport/series/questionnaires-from-taking-part>), implicit in the list of 65 activities prompted in the survey, including not only conventional competitive sporting activities but also keep fit, weight training, yoga and pilates (and with separate questions on walking and cycling). In the systematic literature search, specific sports activities were not used in the search terms, but instead the more general terms sport and exercise were employed.

Culture is defined as a broad term which encapsulates the arts, heritage and museums, libraries and archives (MLA). Again our understanding of the scope of these activities was informed by the questions in the Taking Part Survey, which include 21 arts activities and eight heritage activities, as well as museums and galleries, libraries, and archives. In the systematic literature search, specific arts and heritage activities were not used in the search terms, but instead the more general terms of arts, heritage, museums, galleries, libraries and archives were employed.

1.1.3 Engagement

Engagement in culture and sport can take many forms. For sport, engagement is concerned with participation, but not attendance to sports events (spectating). For culture, this research is mainly concerned with engagement as attendance at culture events / sites. Specifically, it is defined as attending a heritage site; attending an arts event or attending a museum, library or archive. However, this definition of engagement was extended in the case of heritage to social impacts derived from living in an historic environment and the sense of place this generated.

1.2 Objectives of the study

The principal aim of this research is to inform CASE understanding of the social impacts arising from engagement with sport and culture, and the links between CASE partners' intervention and wellbeing. The specific objectives are:

1. To identify and, as necessary, prioritise the range of social impacts resulting from increased participation and engagement with culture and sport.
2. To investigate whether differences exist between social groups in terms of the perceived value to them of social impacts resulting from engagement in sport and culture, and whether there is a disproportionate social impact of engagement in sport and culture on different groups.
3. To explore the relationship between (i) DCMS and CASE board Arm Length Bodies (ALBs) intervention/policy, (ii) increased participation and engagement with sport and culture, and (iii) the range of social impacts identified.

This research comprised two primary tasks reported here:

Table 1.1: Research tasks

Task 1: Literature review (T1)	The literature review underpins the principal aim of the research project, the objectives and all elements of the research programme. It draws evidence-based conclusions on the range of social impacts from engagement with sport and culture.
Task 2: Conceptual framework (T3)	The conceptual framework outlines the inter-relationships between policy action, outcomes and impact in the CASE sectors. The conceptual framework for sport and the arts sectors presents the relationships between participation and social impacts and wellbeing. For MLA and heritage there is insufficient literature reviewed to be able to construct a conceptual framework.

1.3 Structure of report

The literature review underpins all three objectives. However, the report primarily addresses Objectives 1 and 2. Objective 3 is not covered specifically in relation to DCMS, CASE board and ALB intervention/policy but many of the interventions reported in the literature reviewed are funded by a wide array of government agencies in the UK and other countries.

This report is structured as follows: Chapter 2 outlines the literature review methodology; Chapter 3 summarises the literature and provides conceptual frameworks for sport and exercise; Chapter 4 reviews literature and provides conceptual frameworks for the arts; Chapter 5 for heritage; Chapter 6 for museums, libraries and archives (MLA); whilst Chapter 7 presents the conclusions to the literature review.

The results of the systematic literature review are presented separately for sport, arts, heritage and MLA. Within each of these chapters, the findings are produced thematically in as many of six categories of social impact as there is literature identified - these six categories are health, wellbeing, crime, social capital, education, and multiple social impacts. The category 'multiple social impacts' reports on literature where more than one of the social impacts is considered. The literature is presented in two ways. Firstly, a narrative summary of the literature identified is presented for each category of social impact. Secondly, a descriptive analysis of each source identified for review is presented in summary tables in Appendices 7 - 10 and categorised in terms of the hierarchy of evidence (see Chapter 2, section 2.2).

2. Literature Methodology: Systematic Review

This chapter summarises the methodology used to review the literature. For the purposes of the think piece, the procedures for systematic review were followed. The search strategy was pre-defined and a transparent record of the process has been documented. All studies were identified and categorised in terms of the **quality** or **hierarchy of evidence**. No meta-analysis of the findings has been undertaken. Full details of the methodology are provided in Appendix 1.

2.1 Search strategy

The primary source used for the systematic review was the Culture and Sport Evidence (CASE) database (<http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=2>). This source includes references from 1996 and was last updated in March 2012. In addition, to make the review as up to date as possible, the sources used to derive the CASE database (see Bird *et al.*, 2011; Tripney *et al.*, 2012) were searched between April - December 2012 for relevant literature. Finally, any studies known to the authors and the ALBs commissioning the research that met all the pre-determined criteria, but for whatever reason were not identified by the CASE database, were also included. Nevertheless, these sources were categorised and identified separately to ensure that any repeated systematic literature search on the social impacts of culture and sport in the future would uncover the same results (e.g. see Appendix 7). A major omission in the CASE database is the National Benefits Hub (Databank), formally the Benefits Catalogue (Canada). A full list of all the sources used within the literature review is listed in Appendix 2. The CASE database accounted for 44% and 88% of sport and culture literature sources respectively.

The criteria agreed for inclusion and exclusion of literature were as follows: Academic relevance (e.g. peer review; ALB report); Language (English); Timeframe (1996-2012); Length (minimum 3 pages). The specific search strings (terms) agreed by the review panel and the DCMS steering group¹ are listed in Appendix 3. The number of papers included and excluded at each stage of this systematic review process (for each source) is documented in detail in Appendix 4 (sport) and Appendix 5 (culture). In total, 240 sport-related and 204 culture-related papers were reviewed.

2.2 Quality of evidence

A key aspect of systematic review is the hierarchy of evidence. The hierarchy of evidence recognises that evidence varies in quality and attempts to grade evidence according to its reliability and effectiveness. There are various forms of the hierarchy of evidence that have evolved from Guyatt *et al.* (1995) and Sackett (1996), although there is broad agreement that certain types of study (e.g. Randomised Controlled Trials (RCT)) rank above others (e.g. cross-

¹ The CASE steering group comprised of representatives from DCMS, Sport England, English Heritage and Arts Council England (ACE), acted as an advisory group for the project.

sectional studies). Generally, the higher up the hierarchy a methodology is ranked, the more robust it is assumed to be. However, the hierarchy is not absolute and a well conducted, extensive, cross-sectional study may provide more convincing evidence than a poor RCT. For the purposes of the review, evidence has been graded as follows:

Table 2.1: Classification of studies for Sport and Culture

Rank	Methodology	Example/description
A	Systematic reviews/ meta-analyses	Reviews of data that use transparent and rigorous methodology. Meta-analysis includes statistical analysis of results.
B	Randomised Controlled Trials (RCTs)	Clinical trials with clear methodology. They use randomised participants and control groups.
C	Cohort study	A form of longitudinal study. Follows a group of people with a common or defined characteristic. Can be prospective or retrospective.
D	Time-series study	A form of longitudinal study (not panel). Revisits a cross-sectional study or similar after a period of time has elapsed and compares the data.
E	Case-control	Studies that do not use randomised participants but compare two existing groups (one is a control group).
F	Cross-sectional study	Provides data on entire populations based on a sample. Collects data at a defined time.
G	Case study/ programme/ qualitative evaluations	Intensive analysis of an individual or group, or intervention. No case control. Descriptive or explanatory.
H	Economic evaluations	Employ economic analysis methods to quantify the economic value of an intervention or activity.
I	Narrative reviews	Review of literature that does not follow a clearly defined methodology.
J	Policy brief Expert opinion/ Scientific statement	Including opinions from well-respected authorities, descriptive statistics, guidelines based on evidence.

The literature reviewed in chapters 3 to 6 is classified using rank A-J (e.g. Lee *et al.*, 2012^E denotes a case-control study), to enable clear identification of the quality of the study/evidence discussed. Unlike traditional systematic reviews in the medical sciences, which focus heavily on the evidence at the top of the hierarchy, the narrative summaries of the evidence presented in this report also assess the **weight** of evidence in relation to the six categories of social benefit. This is because it is our judgement that over the whole scope of the study, whilst there are a limited number of studies at the top of the hierarchy, there is a considerable weight of evidence from studies lower down the hierarchy which it would be unwise to ignore.

2.3 Strengths and limitations of the systematic review

The systematic review presented within this report is, as far as we are aware, the first attempt to apply a rigorous, transparent and auditable search strategy across the wide body of literature on the social impacts of sport and culture. However, there are invariably limitations with this review, which are summarised below and detailed more fully in Appendix 1.

The CASE database was agreed as the primary source for the review. However, there are several issues with this source in relation to this project. Most significantly:

- The search strings used to construct the CASE database include broad terms such as 'impact' and 'benefit' but not specific social impact terms relevant to this project.
- The CASE database excludes the National Benefits Hub (NBH). Nearly 40% of the sources used for the sport review are drawn from the NBH.
- The CASE database excludes the Cochrane collection (database of systematic reviews and meta-analyses in medicine and health specialities).

Furthermore, the scope of the project did not allow for the search terms to include individual activities (e.g. football; swimming, ballet, dance).

In summary, while the process of systematic review is designed to be 'objective', it still requires judgement to be applied in the decision making process, for example in terms of data extraction (selecting literature based on title and abstract), and data synthesis (interpretation of the literature). The findings presented within this report therefore represent the views and judgements of the authors.

3. Literature Review: Sport and Exercise

Summary of Social Impacts of Sport

There is significant evidence of a number of social impacts from participation in sport and exercise. The highest quality evidence concerns health benefits, which prevent or reduce physical and mental health problems and save on health care costs. There is more evidence for physical health than for mental health. There are some negative health effects from sports injuries, more commonly associated with young people and typically minor injuries. Positive health benefits are population-wide but particularly important to older people.

There is also substantial evidence that sports participation improves pro-social behaviour and reduces crime and anti-social behaviour, particularly for young men. The weight of evidence reviewed suggests a beneficial effect from sports participation on, for example, lower levels of recidivism, drunk driving, use of illegal drugs, crime and suspensions at school, property crime, shoplifting and juvenile crime. The main exceptions to this positive evidence are the association of sport with increased violence and illegal alcohol consumption.

In terms of the social capital impacts from sport, there is evidence that sport is a type of 'social glue', particularly for bonding capital. Positive outcomes in studies include reduced social and ethnic tensions, and more collective action and community involvement through sport, particularly volunteering. Two studies identify negative cases of sports clubs reinforcing social exclusion; and there is only limited evidence of sport providing bridging or linking capital.

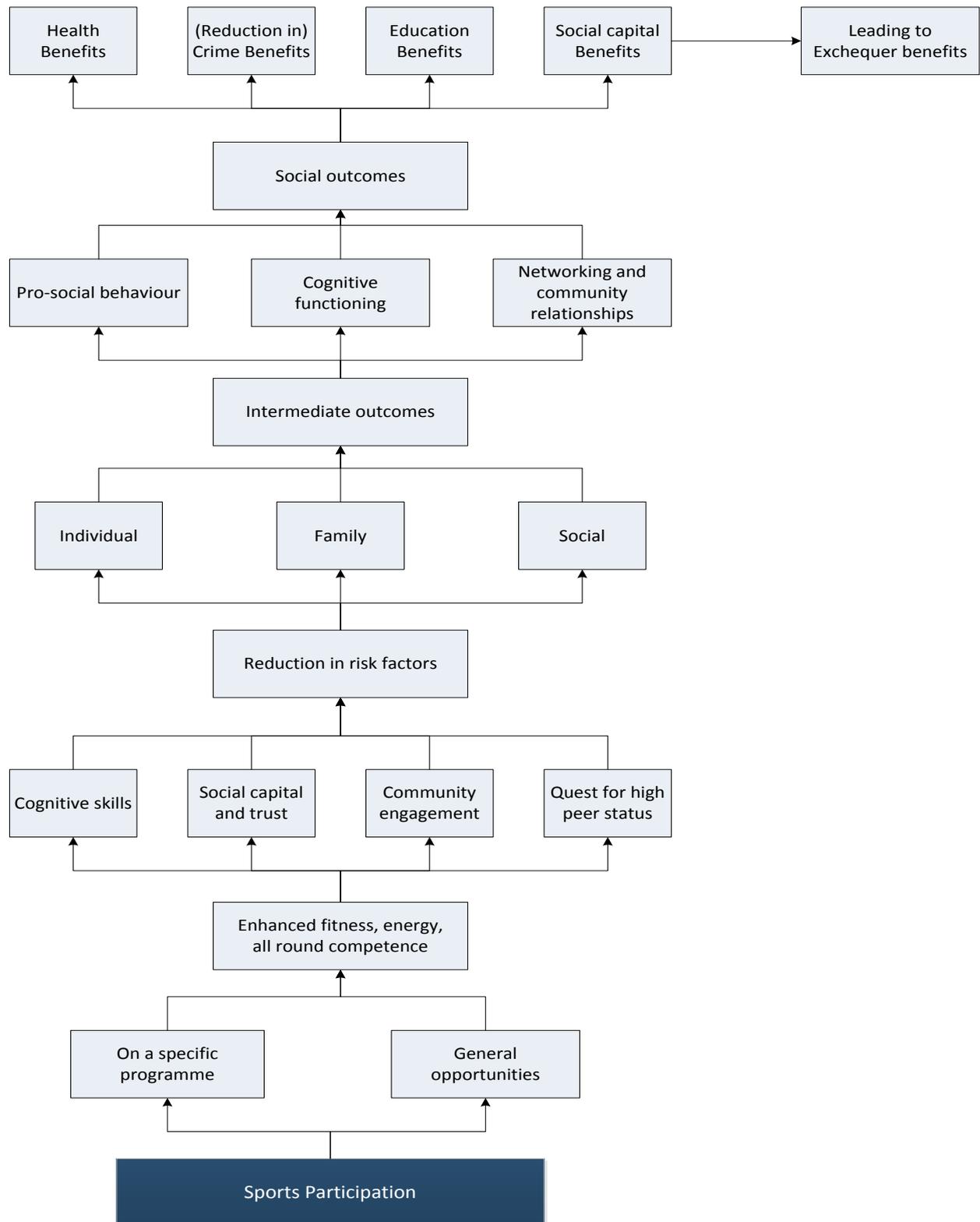
There is considerable evidence of the positive effect of sport and exercise on educational outcomes, including psychological benefits and cognitive benefits. In turn, sport and exercise have been shown to have positive effects on a number of final outcomes, including educational attainment. There are a few contrasting studies which identify negative effects of sports participation on the educational attainment of specific groups of students.

Some studies suggest that sport achieves a number of impacts simultaneously, making it a highly cost-effective intervention. Many of the links between sport and different social impacts are common, including greater physical competence, better cognitive skills, better social skills, trust and reciprocity, and identification with social values. These help to counteract risk factors and stimulate favourable reaction to protective factors.

Wellbeing is the manifestation of the catalytic role that sport plays in stimulating social impacts. Without a sense of wellbeing from participating, people would not sign up to sport; and without a sense of wellbeing from participating, people would not play as frequently as they do. There is evidence of a positive relationship between sport participation and SWB. Wellbeing is connected particularly to health, especially mental health; but also anti-social behaviour, education and social capital.

Figure 3.1 summarises in principle the process through which sports participation (at the bottom of the diagram) generates social impacts (at the top of the diagram), via development of skills (e.g. cognitive skills, community engagement), reduction in risks (e.g. individual and social), and developing intermediate outcomes (e.g. pro-social behaviour and networking).

Figure 3.1 Summary of the Social Impacts of Sport



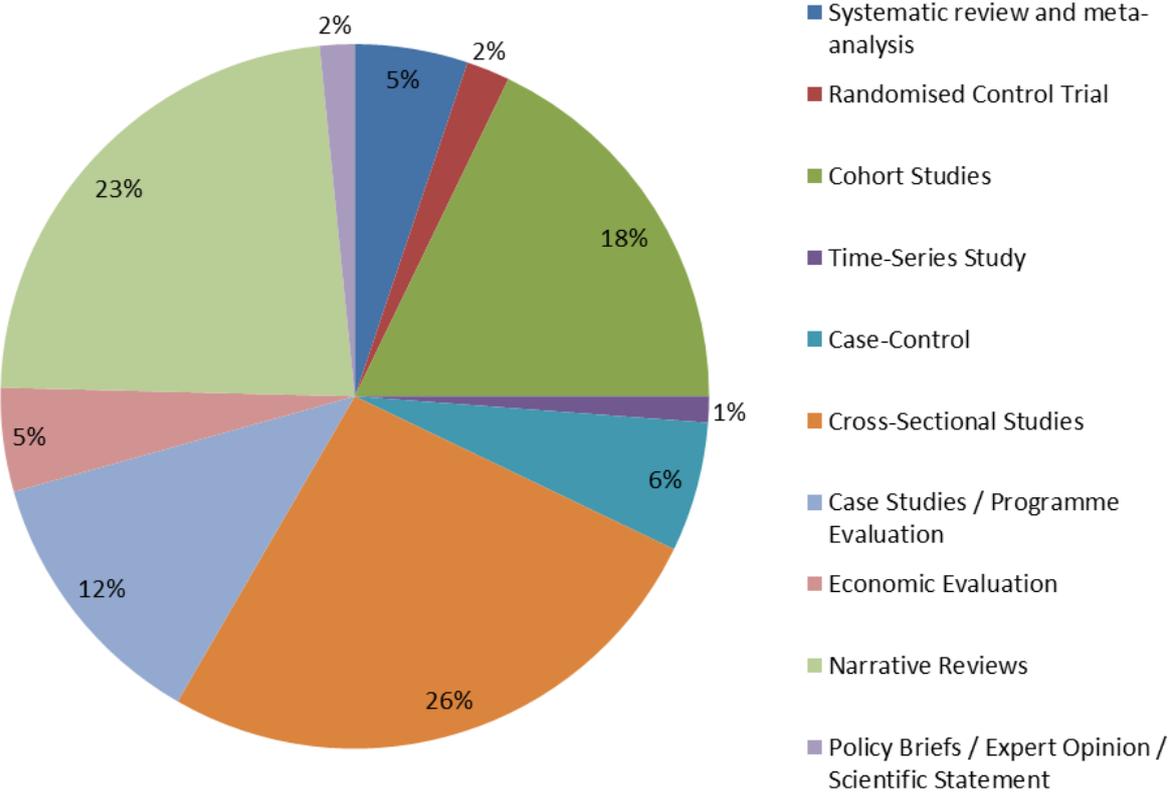
3.1 Introduction

This chapter reviews the literature on the social impacts of sport and exercise, as previously defined in Chapter 1. It includes studies of social impacts stimulated by active participation, but not from spectating. The literature is thematically presented as follows: health, wellbeing, crime,

social capital, education and 'multiple social impacts'. A summary of the literature, ordered according to the hierarchy of evidence is presented at the beginning of each sub-section and in Appendix 6. There are more detailed summaries of each reference provided in Appendix 7.

Figure 3.2 summarises the classification of sport and exercise studies reviewed.

Figure 3.2 Classification of sport and exercise studies: Hierarchy of evidence



3.2 Sport and Health

The systematic review identified 101 studies of the relationship between sport and exercise and health comprising:

- A** 9 systematic reviews and meta-analysis
- B** 3 randomised controlled trials (RCT)
- C** 23 cohort studies
- E** 11 case-control studies
- F** 17 cross-sectional studies
- G** 8 case studies/programme evaluations (not case control)
- H** 10 economic evaluations
- I** 16 narrative reviews
- J** 4 policy briefs and scientific statements

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, two further narrative reviews known to the authors were used to complete the review (Oughton and Tacon, 2007¹ and Cox, 2012¹). In total 103 sources were included in the health review. The literature relating to sport, exercise and health is summarised in Table A7.1 in Appendix 7.

The scope of this literature review is defined by sport and exercise. However, within the area of health, a large number of papers relating to physical activity were also identified within the search. Some of those distinguish between physical activity and sport/exercise, but several found within the search do not. Where studies only refer to physical activity, they have been excluded, which is likely to differentiate the findings of this review from previous studies (e.g. Allison, 1999¹; Cox, 2012¹). In cases where the distinction is not explicitly clear, the studies have been retained for review.

3.2.1 Conceptual issues: Health

A conceptual logic chain is reported in Figure 3.3.

Important conceptual issues identified in the literature include:

- **Primary and secondary prevention** Sport and exercise play a critical role in the prevention and management of many diseases that account for a large proportion of health care costs. It reduces the risk of many diseases (primary) and also provides therapeutic benefits and slows down the progression of certain diseases (secondary).
- **Mental and physical health outcomes** Sport and exercise offers physical and mental health benefits. In the area of mental health, sport and exercise is distinct from physical activity as it offers opportunities for social interaction, which contributes particularly to emotional health.
- **Dose-response relationship** The type, intensity, duration and frequency (dosage) of activity impacts on the level of achieved health benefits. There is considerable debate within the literature about the optimal level of activity needed to generate health benefits and this varies across different diseases. However, much evidence suggests at least moderate levels of activity are required although some evidence suggests that the largest advantage maybe between sedentary and low activity.

- **Specific populations/age-groups within society** The literature reports on both the physical and mental health benefits of sport and exercise to both children and adults. The level of health benefit may be influenced by who is taking part in a particular activity and if it is the case that younger, healthier people are more likely to participate. Negative effects of sports injury are frequently linked to younger people and children. Much of the focus of the positive literature in relation to the elderly and aging is around preventative measures such as falling, agility, self-efficacy; social interaction.

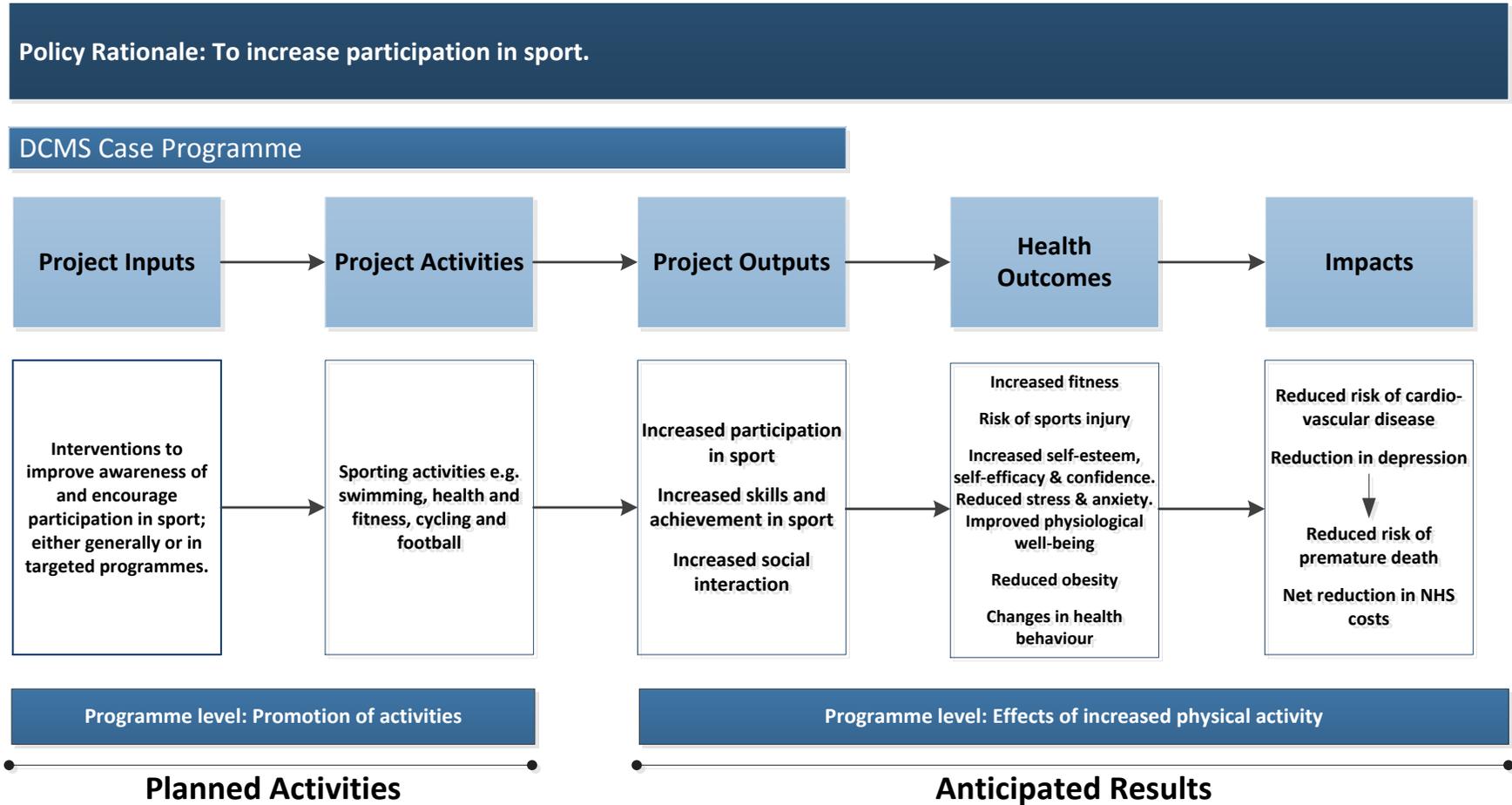
There are three main routes identified in the evidence by which routine participation in sporting activity and exercise improves health (essentially by preventing disease and providing therapeutic benefits for the management of existing diseases and illnesses):

- via biological mechanisms which help to increase fitness, reducing the risk of cardio vascular disease and other chronic diseases and providing therapeutic benefits for certain chronic diseases which lead to a reduced risk of premature death;
- via physiological mechanisms which reduce stress hormones, improve psychological wellbeing and lead to improved mental health and a reduced risk of depression and premature death;
- via psychological mechanisms of self-efficacy, distraction and self-esteem which in turn also reduce stress and anxiety, improve psychological wellbeing and mental health and lead to a reduced risk of depression and premature death. Psychological wellbeing and improved mental health are linked to physical health as they also play an important part in the prevention and management of cardio-vascular disease and management of other chronic diseases.

A distinctive feature of the conceptual model is the role that organised sport and exercise plays in providing a social context and opportunity for positive social interaction which helps to tackle feelings of social isolation, a common symptom of poor mental health, and leads to improved self-esteem and self-efficacy.

Figure 3.3

DCMS Social Impacts of Participation in Sport: Indicative Health Logic Chain



3.2.2 Evidence of Effects

The impacts of sport and exercise to both physical and mental health are widely reported within the literature. The evidence suggests that there is a positive association between sport and exercise and health, in terms of the primary prevention of certain diseases and secondary prevention (slows progression of disease; provides therapeutic benefits). However, the evidence suggests the association can sometimes be negative, particularly in relation to sports injuries (Allison, 1999^I; Oughton and Tacon, 2007^I; Walsh, 2011^I).

The literature on health provides the strongest evidence of social impact from engagement with sport and exercise. It is one of the more straightforward areas of social impact to explore, as historically there has been greater quantitative research in this area. Furthermore, the quality of evidence in relation to the hierarchy of evidence is stronger, largely resulting from the significant amount of research undertaken by the scientific medical community.

There is generally a stronger and greater amount of evidence to support the physical health benefits of sport and exercise although there is a growing literature in the area of mental health to support similar conclusions. One of the difficulties with establishing the association between sport and exercise and health is determining causality. Many cross-sectional studies examine the relationship between sport/exercise across a sample of people at a particular point in time. However, positive relationships may exist because people with better health participate more regularly (Oughton and Tacon, 2007^I). Longitudinal and cohort studies provide more insight into causality and tend to be more common within the field of physical health.

Organised sport and exercise provide an important social context for tackling feelings of social isolation, a factor in poor mental health. Several studies have demonstrated the therapeutic benefit to psychosocial health of engaging in organised sport and exercise including improved cognitive function, wellbeing and self-esteem and self-efficacy. More generally studies have shown that increased physical activity is associated with decreased levels of mental stress, life dissatisfaction and anxiety.

The literature does not discuss in any detail the interrelationship between physical and mental health. Perceived health status is influenced by many factors and there is evidence that personal assessments of physical health are influenced by personal feeling states and vice versa. There is also more evidence of physical activity benefiting older people (for instance higher levels of agility) with far less known about the impact of physical activity across ethnic groups.

3.2.3 Physical Health

There is widespread consensus within the literature that sport and exercise has preventative and therapeutic benefits in adults and children alike. There is robust scientific evidence of the positive association between sport and exercise and physical health although some reported risks of negative impacts including accidents, injury and undiagnosed cardiac diseases (Allison, 1999^I; Keogh *et al.*, 2009^A; Oughton and Tacon, 2007^I).

The dose-response relationship is complex and varies by disease, although there is widespread support for the notion that greatest social impact in relation to health gain would be derived from getting the inactive majority to increase their levels of sport, exercise and physical activity. Many studies support positive physical health benefits with at least moderate intensity activity (Cox, 2012^I) and that generally there is a positive linear relationship between additional activity levels and additional improvements in health and mortality (Warburton *et al.*, 2006^I, 2007^I; Lee and Skerrett, 2001^A; Thompson *et al.*, 2003^J).

Primary Benefits

Research strongly suggests that sport and exercise can lead to the prevention of chronic diseases including premature mortality, cardiovascular disease (CVD), diabetes, obesity, some cancers, strokes and osteoporosis and premature death (Warburton *et al.*, 2006^I, 2007^I; Mulholland, 2008^I).

There is strong and significant evidence of the association between sustained activity in aerobic sports and lower risk of CVD (Houston *et al.*, 2002^C; Keogh *et al.*, 2009^A; Warburton *et al.*, 2006^I, 2007^I; Thompson *et al.*, 2003^J);). Hoevenaar-Blom *et al.* (2011^F) found that this relationship was activity dependent, with cycling and sports inversely related to CVD, but physical activities such as walking and gardening were not. Furthermore, for sports (not cycling) a dose-response relationship was found. Activities with moderate intensity are linked with lower levels of CVD.

There is significant evidence of higher levels of exercise and physical activity being associated with reduced risk in relation to other chronic illness including: Stroke (Grau *et al.*, 2009^F); endometrial and ovarian cancer in women (Gierach *et al.*, 2009^C; Lee *et al.*, 2012^E); breast cancer in postmenopausal women (Peters *et al.*, 2009^C; Leitzmann *et al.*, 2008^C); lung cancer amongst smokers (Schmidt *et al.*, 2012^E).

There is also evidence to suggest that exercise and physical activity is associated with reduced risk of mortality and longer life expectancy (e.g. Buchman *et al.*, 2012a^C; Lee and Skerrett, 2001^A; Moore *et al.*, 2012^C; Byberg *et al.*, 2009^C).

Other studies showed that sport and exercise improves general physical health in different sub-groups of the population, particularly older people.

In adolescents, Klentrou *et al.* (2003^F) found evidence that moderate activity can lead to decreased illness; Lahti *et al.* (2012^C) similarly found in middle aged adults that the persistently active had the lowest levels of sickness absence.

In older adults, both Keogh *et al.* (2009^A) and Wolf *et al.* (1996^B) found that exercise reduces the risk of musculoskeletal injury by improving agility and balance, and reducing frailty and falls among older people. Similarly, Wolf *et al.* (1996^B) provided evidence from a RCT that a 15 week intervention of Tai Chi reduced the risks of falls in older people by 47.5%. Also in older adults, Tak *et al.* (2012^A) found that physical activity and exercise prevent the onset of disability. In older men, Parsons *et al.* (2011^C) found that higher levels of exercise and physical activity are associated with decreased risk of incidence of lower urinary tract symptoms.

Various studies suggest that participation in sport and exercise promotes positive health behaviours in various subgroups (e.g. Taliaferro *et al.*, 2010^F; Reid *et al.*, 2000^A), which can lead to a reduced risk of various diseases and illnesses. For example, Audrain-McGovern (2006^C) found that for adolescents participating in at least one team sport, physical activity had a significant negative effect on smoking progression; Aarnio (2003^C) similarly found that active adolescents smoke less than inactive ones. Kaufman *et al.* (2012^E) found that a sports-based intervention increased HIV-related knowledge amongst adolescents in the Dominican Republic. Solomon (2002^J) presented research showing the importance of sports in teen pregnancy prevention.

Secondary Benefits

Further secondary benefits of sport and exercise to physical health are reported in the literature (Warburton *et al.*, 2006^I). Sport and exercise is associated with therapeutic benefits for certain illnesses such as cancer (e.g. Cheville *et al.*, 2012^G) and slows the progression of others such as

osteoporosis (Cox, 2012^I; Leime and O'Shea, 2010^I). There is incontrovertible evidence that physical activity and exercise is effective in the secondary prevention of various diseases including the management of diabetes; improving low bone mineral density and osteoporosis (Warburton *et al.*, 2006^I, 2007^I; Thompson *et al.*, 2003^J; Milligan, 2012^G; Mulholland, 2008^I).

For particular sub-groups, sport and exercise were seen to improve physical rehabilitation. For older adults, Alburquerque-Sendin (2012^G) showed that physical activity and exercise adapted to older women can effectively change the decline in physical ability associated with aging. Tak *et al.* (2012^A) similarly found that it prevents the progression of disability associated with aging.

Negative Effects

Despite the evidence to suggest that greater participation in sport and exercise enhances physical health, there is a growing literature that some forms of sports participation actually increase illness and injury. Several studies highlighted injury as a negative effect of sports participation to physical health. Maffulli *et al.* (2011^A) carried out a systematic review and synthesis of existing clinical evidence of long term follow-up outcome of sports injuries. They conclude that physical injury is an inherent risk in sports participation and may lead to incomplete recovery, although note that few well-conducted studies are available on the long-term follow up of former athletes compared with the general population.

Several studies focused specifically on musculoskeletal injuries to children and all found that injuries are common in children. Grimmer *et al.* (1999^F) found that injuries amongst students playing sport are common (one body part injured for every three participations), but mostly these were minor. They found significantly, higher risk of year 7 students injuring themselves compared to year 10, with elevated risk in some sports. van Mechelen *et al.* (2011^C) found that girls were at higher risk of physical activity (PA) related injuries and estimated high associated cost. Garrick and Requa (2003^I) noted that the negative consequences of musculoskeletal injuries sustained during sports participation in childhood adolescence may compromise function later in life, although there is limited long term evidence. In the absence of injury, vigorous participation in sports and fitness activities during childhood and adolescence increases the likelihood of developing subsequent osteoarthritis.

While the literature does demonstrate that sport can promote positive health behaviours, there are some studies, which suggest that certain sporting environments may encourage negative health behaviours. For example, in Sweden Rolandsson and Hugoson (2003^C) found that the environment in which ice hockey is practiced can in itself constitute a risk for tobacco usage becoming established among adolescents. Terry-McElrath *et al.* (2011^F) demonstrate substantive differences between exercise and team sport participation in relation to adolescent substance use, with higher levels of athletic sports participation being associated with higher levels of smokeless tobacco, high school alcohol and steroid use.

3.2.4 Mental Health

The evidence around the impacts of sport and exercise on mental health is substantially less than for physical health. However, the evidence base is growing and research suggests that sport and exercise can have positive preventative and therapeutic benefits for mental health and wellbeing (Walsh, 2011^I). There is evidence that sport and exercise may reduce the risk of developing mental health illnesses and be beneficial in treating certain mental illnesses (Street and James, 2007^I; Wynaden *et al.*, 2012^G). Furthermore, unlike domestic or work-based physical activity, sport and exercise/recreation in an organized context provide a social element, which can help tackle feelings of isolation, often a symptom associated with poor mental health (Cox, 2012^I).

The literature does consider the dose-response relationship between sport and exercise and mental health. Nevertheless, this is less well developed than in the physical health literature. Walsh (2011^I) suggests that there appears to be a dose-response relationship, with higher intensity workouts being more effective, while Kim *et al.* (2012^F) suggest an optimal range of 2.5-7.5 hours per week. Cox (2012^I) argue that more research is needed to better understand dose-response relationships in the area of mental health.

Primary Benefits

Both cross-sectional and prospective cohort studies show that sport and exercise can reduce the risk of depression and suicide as well as neurodegenerative disorders such as Alzheimer's Disease (AD) and Parkinson's Disease (PD) (Walsh, 2011^I).

Bowens' (2012^C) longitudinal cohort study found that older adults who reported vigorous physical activity were 21% less likely than their counterparts to be diagnosed with dementia. Jedrziwski *et al.* (2010^C) also provided evidence supporting the potential of exercise to lower the risk of dementia. Similarly, Buchman *et al.* (2012^C) found that a higher level of total daily activity is associated with a reduced risk of AD; Xu *et al.* (2010^C) presented evidence to suggest that higher levels of moderate to vigorous exercise in mid or later life are associated with reduced risk of PD. Etgen *et al.* (2010^C) found that moderate to high physical activity is associated with reduced incidence of cognitive impairment after two years in a large population-based cohort of elderly subjects.

Gallegos-Carillo *et al.* (2012^C) found that individuals with a higher activity level have a lower risk of developing depressive symptoms as compared to those with inactive or moderate PA pattern. PA may reduce risk of depression in Mexican adults. Highly active PA pattern reduced the risk of *depression* by about 56%.

Taliaferro *et al.* (2011^C) found that compared to non-participants, youth involved in sport in both middle and high school had a lower risk of suicidal ideation during high school, concluding that remaining involved in sport throughout adolescence can offer mental health benefits. Similarly Brosnahan (2004^F) found a beneficial effect of physical activity on feelings of sadness and suicidal behaviours in Hispanic and non-Hispanic adolescents aged 14-18.

Secondary Benefits

Sport and exercise can also create therapeutic benefits for depression, anxiety and tension, eating, addictive and body dysmorphic disorders, age-related cognitive decline, the severity of AD and some symptoms of schizophrenia (Street and James, 2007^I; Thompson Coon *et al.*, 2011^A; Walsh, 2011^I). Evidence was also found of associations between sport and improved mental health in children.

Babyak *et al.* (2000^E) found that among individuals with major depressive disorders, exercise therapy is associated with significant therapeutic benefit, especially if exercise is continued over time. Similarly, Hodgson *et al.* (2011^G) found that physical activity programmes can result in benefits to mental wellbeing and assist in the recovery of those with severe and enduring mental illness (SEMI). Furthermore, for patients hospitalised in an acute secure setting, Wynaden *et al.* (2012^G) found that a healthy lifestyle programme, which incorporated an exercise programme, assisted patients with psychotic illness to manage their symptoms.

Further therapeutic benefit to psychosocial health was reported in several studies. For example, Schnohr *et al.* (2005^F) found that increasing physical activity in leisure time was associated with decreased level of mental stress, life dissatisfaction and anxiety. Temple *et al.* (2008^E) and Reid

et al. (2000^A) found positive associations between exercise and improved psychosocial health (including cognitive functioning, wellbeing, self-esteem and self-efficacy).

Health impacts across different age groups were identified within the literature. Griffiths *et al.* (2010^F) found that children that engaged in sport had fewer mental health difficulties, emotional, conduct, hyperactivity-inattention and peer-relationship problems and more pro-social behaviours than those with sedentary behaviours. Pontifex *et al.* (2012^E) found that single bouts of moderately intense aerobic exercise may have positive implications for aspects of neurocognitive function and inhibitory control in children with attention deficit hyperactivity disorder (ADHD). Temple *et al.* (2008^E) identified mental health benefits for older adults.

3.2.5 Valuing health care benefits and costs

In policy terms, it has been recognised for some time that higher and more frequent levels of physical activity lead to economic savings. Indeed, Cabinet Office (2002) concluded that health-related costs constitute the single largest argument for the promotion of physical activity. More widely debated are the actual direct costs (e.g. medical care costs), indirect costs (e.g. loss of productivity from absenteeism or lower productivity) and intangible costs (e.g. to individuals and facilities of reduction in QOL) and benefits associated with sport and exercise. The evidence in relation to health care costs and savings therefore needs to be viewed cautiously and further research (e.g. meta-analysis) is required to draw conclusive estimates of the actual health care costs and benefits of sport and exercise. Nevertheless, the literature does suggest that sport, exercise and physical activity generate significant economic value in terms of potential health care savings.

Table 3.1 summarises some of the health care benefits and costs related to sport and exercise. Some include detailed estimates of the costs of disease and illness; others detail the costs and benefits of physical activity. Moreover, some studies attempt to quantify the health care cost savings for specific sports (e.g. Bowles, 2005^G; Marsh *et al.*, 2010^H).

Many of the studies estimate the costs associated with physical *inactivity*. Colditz (1999^H) and Katzmarzyk *et al.* (2000^H) are particularly widely cited papers, both reporting on the health care costs of physical inactivity in the US (2.4% health care expenditures) and Canada (2.5% health care costs) respectively. Kahn and Norman (2012^J) suggest that physical inactivity costs the UK approximately £8.3 billion per year. While the literature reflects geographically diverse examples, there is a consensus that decreasing physical inactivity in most countries, including the UK, would create considerable health care savings.

Table 3.1: Sport, exercise and health care costs and savings

Study ¹	Reported health care benefits and costs
Annemans <i>et al.</i> (2007 ^H)	The results show that controlled exercise offers value for money, even if society covered its expenses completely. The paper estimates from a societal point of view, the cost effectiveness of exercise's effects on several diseases, with associated QOL benefits.
Bowles (2011 ^G)	Estimated projected cost savings of cyclists in Iowa: <ul style="list-style-type: none"> • The estimated savings of existing commuter cyclists for all of the state of Iowa are \$13,266,020 in health care costs. • The total savings for recreational riders in the state of Iowa are estimated at \$73,942,511 in health care costs.

Cadilhac <i>et al.</i> (2011 ^H)	A 10% reduction in physical inactivity would result in 6,000 fewer incident cases of disease, 2,000 fewer deaths, 25,000 fewer Disability Adjusted Life Years and provide gains in working days (114,000), days of home-based production (180,000) while conferring a AUD96 million reduction in Australian health sector costs.
California Center for Public Health Advocacy (2009 ^H)	This study estimated the cost to California for overweight, obesity, and physical inactivity in 2006 to be \$41.2 billion. Of the total costs, \$21.0 billion was attributable to overweight and obesity and \$20.2 billion was attributable to physical inactivity. Half of the total amount was spent on health care and half came from lost productivity.
Chenoweth and Leutzinger (2006 ^H)	The financial burden (which includes direct medical care, workers' compensation, and productivity loss costs among seven US states, is \$93.32 billion for physical inactivity and \$94.33 billion for excess weight. The estimated nationwide cost of these risk factors is approx. \$507 billion; projected to exceed \$708 billion by 2008.
Colditz (1999 ^H)	The direct costs of lack of physical activity are approximately \$24 billion or 2.4% of the US health care expenditures. Direct costs for obesity defined as body mass index greater than 30, in 1995 dollars, total 70 billion dollars. Overall the direct health care costs of obesity were approximately 70 billion dollars. Overall the direct costs of inactivity and obesity account for some 9.4% of the national health care expenditures in the US.
Colman (2002 ^H)	Epidemiological studies estimate that 36% heart disease; 27% osteoporosis, 20% stroke, hypertension, diabetes 2 and colon cancer; and 11% breast cancer are attributable to physical inactivity. It is estimated that physical inactivity costs the Nova Scotia health care system \$66.5 million a year in hospital, physician and drug costs alone, equal to 4% of total government spending on these services. When all direct health care costs are added, including private expenditures, a sedentary lifestyle costs Nova Scotians \$107 million a year in direct medical care expenditures. Physical inactivity costs the Nova Scotia economy an additional \$247 million each year in indirect productivity losses due to premature death and disability. Adding direct and indirect costs, the annual total economic burden of physical inactivity in Nova Scotia is estimated at \$354 million.
Cox (2012 ^H)	<p>Report includes detailed estimates of the health costs of disease, and the costs and benefits of physical activity/inactivity for example:</p> <ul style="list-style-type: none"> • Cardiovascular disease costs the UK economy over £30 billion per year and diabetes costs £9 billion. Costs of other physical illness to the NHS are identified. • Mental health problems cost the care system £21 billion and costs UK businesses £30 billion in sick leave absence and unemployment costs. • Sport could potentially prevent over 23,000 hip fractures each year, saving over £600 million
Health and Human Services (2007 ^J)	<p>Reported a range of healthcare costs associated with physical inactivity from various sources including:</p> <ul style="list-style-type: none"> • Health care costs associated with physical inactivity topped \$76 billion in 2000. Physical inactivity accounts for approximately 2.4% of the cost of U.S health care (Colditz)

	<ul style="list-style-type: none"> Increasing regular moderate physical activity among the more than 88 million inactive Americans over age 15 might reduce annual direct medical costs by as much as \$76.6 billion (Pratt <i>et al.</i>). Physical inactivity accounts for 22% of coronary heart disease, 22 % of colon cancer, 18% of osteoporosis-related fractures, 12 % of diabetes and hypertension, and 5% of breast cancer (Centres for Disease Control and Prevention (CDC))
Katzmarzyk <i>et al.</i> (2000 ^H)	About \$2.1 billion or 2.5% of the total direct health care costs in Canada were attributable to physical inactivity in 1999. About 21,000 lives were lost prematurely in 1995 because of inactivity. A 10% reduction in the prevalence of physical inactivity has the potential to reduce direct health care expenditures by \$150 million a year.
Kahn and Norman (2012 ^J)	Estimates of NHS costs as a result of inactivity £1 billion -1.8 billion; costs of lost productivity to wider economy £5.5billion from sickness and absence; £1 billion from premature death. Together inactivity costs approximately £8.3 billion per year (DoH, 2009)
Leime and O'Shea (2010 ^I)	Summarises some of the key findings from research, arising from the benefits of physical activity to older people. It reports on various studies that indicate the potential savings to health care costs including: <ul style="list-style-type: none"> An Australian study that estimated if more people increased their level of physical activity by 30 minutes per day, it could save 1.5 billion Australian dollars (gross) in costs related to heart disease, stroke, type 2 diabetes, depression and falls (Medibank, 2007). In the US, an investment of US\$1 of time and equipment in the promotion of physical activity leads to US\$3.2 in medical cost savings (WHO, 2003).
Marsh <i>et al.</i> (2010) ^H	This report estimates that the typical lifetime <i>healthcare cost saving</i> generated by doing sport varies between £1,750 (badminton) and £6,900 (health and fitness) per person. The total <i>economic lifetime value</i> generated by doing sport varies between £11,400 (badminton) and 45,800 (health and fitness) per person. Variation in value depends on duration and frequency.
Mulholland (2008 ^I)	The direct and indirect costs of physical inactivity in Canada are estimated at \$1.6 billion and \$3.7 billion annually. Increasing physical activity levels by just 10 per cent would save Canadians over \$150 million annually in direct health care costs alone.
Popkin <i>et al.</i> (2006 ^H)	Using a case study of China, this study found that the indirect effects of obesity and obesity-related dietary and physical activity patterns range between 3.58% and 8.73% of GNP in 2000 and 2005 respectively. It lists the dietary/activity costs by disease for China (in US dollars) in 2000 and 2005.
Pratt <i>et al.</i> (2000 ^F)	For those 15 and older without physical limitations, the average annual direct medical costs were \$1,019 for those who were regularly physically active and \$1,349 for those who reported being inactive. The costs were lower for active persons among smokers (\$1,079 vs \$1,448) and non-smokers (\$953 vs \$1,234) and were consistent across age-groups and by sex. The mean net annual benefit of physical activity was \$330 per person in 1987 dollars. The results suggest that increasing participation in regular moderate physical activity among the more than 88 million inactive Americans over the age of 15 might reduce annual national medical costs by as much as \$29.2 billion in 1987 dollars - \$76.6 billion in 2000 dollars.

Spence <i>et al.</i> (2001 ¹)	<p>In Canada, a total of \$2.1 billion of health care expenditure was directly attributable to physical inactivity in 1999. This amount represented 2.5% of the total annual health care costs. The highest costs attributable to inadequate physical activity were associated with:</p> <ul style="list-style-type: none"> • coronary arterial disease (\$891 million), • osteoporosis (\$352 million), • stroke (\$345 million), and • hypertension (\$314 million). <p>Based on this analysis, a 10% reduction in the prevalence of physical inactivity would reduce direct health care expenditures by \$150 million per year.</p>
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1. Note: Hierarchy of evidence categories identified after the date of reference

3.2.6 Conclusions on Sport and Health

There is a strong evidence base on the mainly positive relationship between engagement in sport and physical exercise and health. Evidence is typically of a high quality given the large body of rigorous scientific research undertaken by researchers working in this field. It should be stressed that research in health broadly focuses on physical exercise rather than specific sports.

Overall the amount of evidence to support the physical health benefits of sport is much greater than that supporting the mental health benefits although evidence is growing in this area. An important distinction in the literature is the role that sporting activity plays both in preventing disease and in providing therapeutic benefits for the management of existing diseases and illnesses. This is the case for both physical and mental health.

With regard to physical health the body of evidence strongly indicates that exercise and sport can **prevent** a number of chronic diseases, most commonly cardiovascular disease, diabetes, some cancers, strokes, osteoporosis and premature deaths. Studies are based on a mix of self-reported measures of health and objective measures (e.g. physical tests such as blood pressure measurements and lung function tests). Some interventions may impact on health in ways that are not amenable to self-reporting.

There is less evidence linking sport and exercise to mental health benefits but the amount of evidence is growing and demonstrates both primary benefits in terms of prevention and secondary benefits in terms of its therapeutic benefits. Several studies have shown that sport and exercise can **lower the risk** of depression and suicide and other neurological conditions such as PD and AD and create therapeutic benefits for depression, anxiety and tension, eating addictions and body dysmorphic disorders, age-related cognitive decline, the severity of AD and some symptoms of schizophrenia.

One noticeable gap in the literature is the lack of evidence on the relative effectiveness of different forms of exercise and sport on health. However, there is much discussion about the optimal level of activity needed to generate health benefits and how this varies across different diseases. The dose response relationship is complex and the type, intensity, duration and frequency (dosage) of activity influences the level of health benefits achieved. There is more evidence on the dose response relationship for physical health benefits with the greatest body of evidence indicating at least moderate levels of activity are required.

Another measurement issue is how long does it take for health impacts to be evident? There was little evidence on this, except for some studies at a national level which have tracked participants

over a long time period. Some impacts will occur sooner than others and benefits such as reduced risk of premature death will accrue over a prolonged period of time. There is evidence that even one episode of exercise can have beneficial effects.

There is some evidence of a dose response relationship between sport and exercise and mental health with higher activity levels being associated with a lower risk of depressive symptoms. However, more research is needed in this area as the evidence is complex and associations between physical activity and mental health tend to be more indirect than for physical health. Other factors such as the organisational setting, whether the activity is indoors or outdoors in natural surroundings, and the role project facilitators play may be important in influencing mental health benefits.

3.3 Sport and Wellbeing

The systematic review identified eight studies of the relationship between sport and exercise and wellbeing

- C 1 cohort study
- F 4 cross-sectional studies
- H 1 economic evaluation
- I 2 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, an edited collection of academic papers (Rodriguez *et al.*, 2011) was included in the review, as a known text on the subject of sport, health and happiness. From this source, four more papers were added to the review (three cross-sectional studies: (Downward and Rascuite, 2011^F; Forrest and Mchale (2011^F); Kavetsos (2011^F); and one cohort study Pawlowski *et al.* (2011^C). A reference provided by the DCMS was also included (Rascuite and Downward, 2010^F). In total 13 sources were included in the wellbeing review. The literature relating to sport, exercise and wellbeing is summarised in Table A7.2 in Appendix 7.

3.3.1 Conceptual issues: Wellbeing

A conceptual logic chain is reported in Figure 3.4.

The following conceptual issues are identified in the literature:

- In health terms, wellbeing has both physical and mental dimensions. The linkages with mental health are particularly close, but relationships also exist with other social impacts such as social capital, crime and education. The contribution of sport and exercise to wellbeing and the relationships to outcomes in these other areas are complex.
- More than one variable may contribute to causality of subjective wellbeing (SWB), with sport and exercise playing a role in combination with other social factors, for example social support and friendship (Galloway *et al.*, 2006^I).
- There is a wider case for sport, rather than general exercise, made between participation and wellbeing, through the opportunities that sports participation provides for social interaction (Downward and Rascuite, 2011^F).

Definitions of wellbeing across the academic literature and in terms of public policy making are wide ranging. Wellbeing as an overarching concept includes a broad range of factors, including economic performance, QOL, the state of the environment, sustainability, equality, as well as individual wellbeing (ONS, 2012). Within the sport and exercise literature reviewed, wellbeing is largely discussed in relation to individual wellbeing, although, there is no standardised definition. Galloway *et al.* (2006^I) note how some authors use wellbeing interchangeably with QOL, while others regard it as one component of the broader concept of QOL.

Within the literature reviewed, SWB is a key theme and therefore the focus of this section. In the field of economics, SWB is defined as life satisfaction or happiness, pertaining to the individual (Bridges, 2006^I, Galloway *et al.*, 2006^I). Economists have developed a number of techniques for valuing SWB, with Downward and Rascuite (2011^F; 2011a^F) and Marsh *et al.* (2010^H for CASE), using different approaches to estimate the monetary value of sports participation on SWB.

Figure 3.4

DCMS Social Impacts of Participation in Sport: Indicative Wellbeing Logic Chain

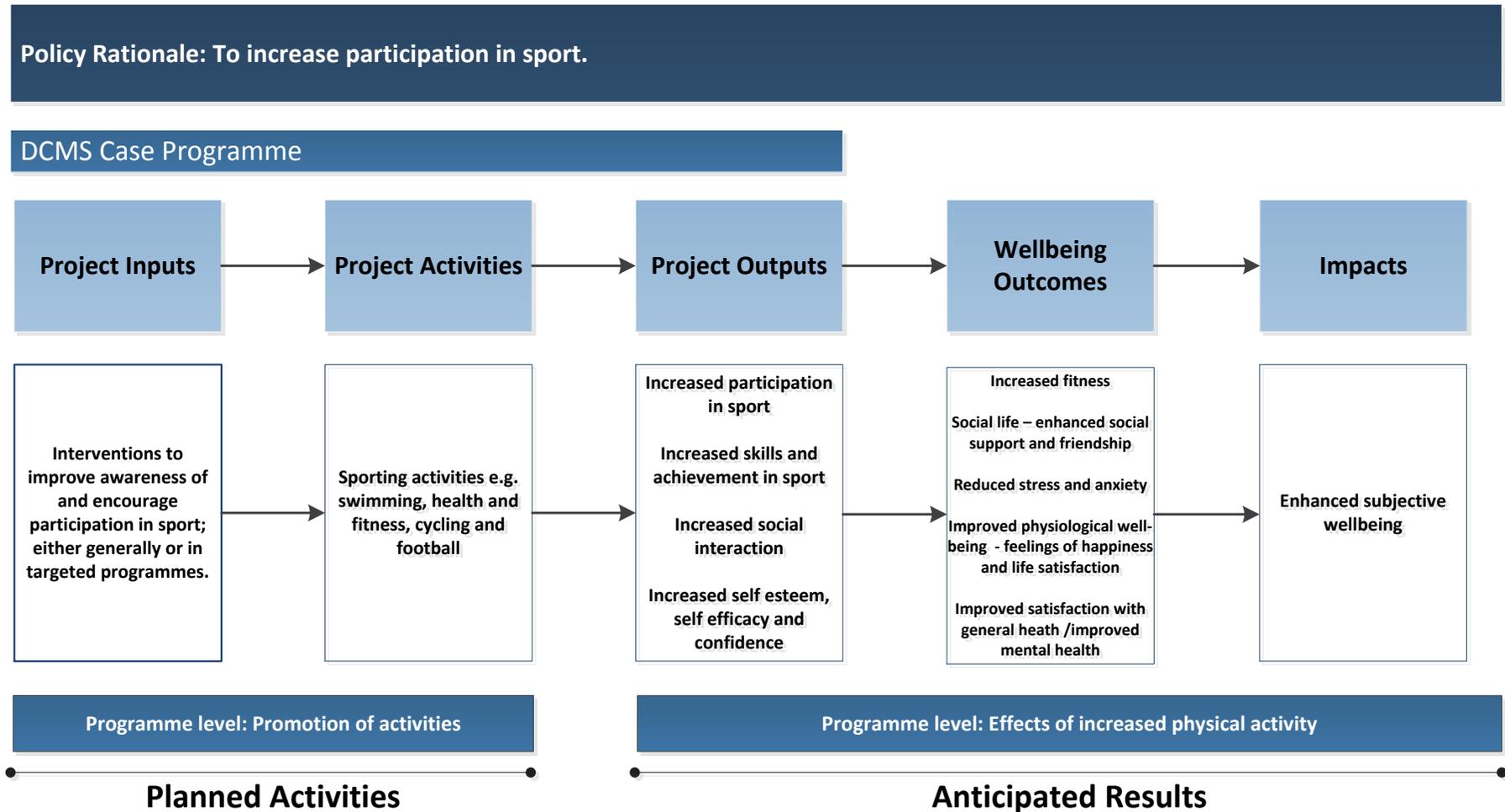


Figure 3.4 illustrates that increased opportunities for social interaction provided by sport and exercise, and the enhanced physical competencies that result, both help to improve confidence, self-esteem and self-efficacy and fitness levels which in turn reduce stress and anxiety, enhance SWB and improve mental health. Given the strong evidence of a direct biological link between physical activity and physical health, Figure 3.4 also shows how improved physical health as a result of increased fitness may help to enhance wellbeing.

3.3.2 Subjective wellbeing

A detailed body of evidence on the determinants of SWB is developing in the economics literature (Downward and Rasciute, 2011^F) and there is growing evidence of the association between sport, exercise and SWB. However, wellbeing literature is primarily evidenced from cross-sectional studies and causality is difficult to establish (Downward and Rasciute, 2010^F, 2011^F, 2011a^F; Huang and Humphreys, 2012^F, Kavetsos, 2011^F). The quality of evidence for wellbeing in relation to other outcome areas is relatively weak and further longitudinal data analysis is required to establish causality. A further criticism of SWB research is the strong use of narrative and anecdotal evidence, with the subjective perceptions of individuals playing a key role (Galloway *et al.*, 2006^I). Finally, there is limited evidence of the dose-response relationship for sport and SWB.

The studies reviewed used happiness or life satisfaction as a proxy to measure SWB. Several studies used secondary data sources to explore the relationship between sport and SWB. Downward and Rasciute (2011^F, 2011a^F), Rasciute and Downward (2010^F), Huang and Humphreys, (2012^F), Forrest and McHale (2011^F), Kavetsos (2011^F) and Lechner (2008^C) used evidence from large datasets to explore the relationship between sport and exercise and SWB. All studies found a positive association between SWB of the population and participation in sport and exercise. Lechner (2008^C) also suggests that this positive association contributes to higher average earnings for those who participate in sport and exercise. Bridges (2006^I) suggests that sport improves SWB and this may contribute to working more effectively.

The literature suggested that various factors might influence SWB including the following:

- Downward and Rasciute (2011^F) suggest that greater happiness is experienced if one allows for the social interaction nature of some sports.
- Huang and Humphreys (2012^F) and Pawlowski *et al.* (2011^C) suggest that proximity to sport facilities is a mediating factor, with individuals living in a location with greater access to sports facilities more likely to participate in physical activity and report higher life satisfaction.
- Kavetsos (2011^F) and Marsh *et al.* (2010^H for CASE) suggest that levels of happiness appear to increase with frequency of participation.
- Landows' (1997^F) doctoral research on undergraduate students, found that those students participating in a sport requiring physical exertion reported the highest SWB on all three domains of SWB (social, physical, emotional).

3.3.3 Valuing subjective wellbeing

There have been attempts to value SWB and participation in sport and exercise:

- The authors Downward and Rasciute have produced several papers that have used econometric modelling to estimate the impact of sports participation on SWB. In Downward and Rasciute (2011^F, 2011a^F) a willingness to pay (WTP) analysis was performed. Downward and Rasciute (2011^F: 345) estimated that 'in the aggregate, on average, a person values participation in sport to be about £19,000-23,000 per year,

while an additional sport participated in relative to their portfolio was measured at about £1,600-3,500 per year'. In Downward and Rascuite (2011a^F) they estimated that with the exception of sports cycling, an episode of walking or participation in any sport generate approximately £18,000-24,000 of wellbeing to individuals. Downward and Rascuite (2011^F) was based on the first wave of Taking Part data; Downward and Rascuite (2011a^F) was based on two waves of Taking Part data.

- Marsh *et al.* (2010^H) measured the impact of engagement in sport (and culture) on SWB as part of the CASE programme – (Drivers Impacts and value work)². The analysis drew on data in the British Household Panel Survey (BHPS) to measure the SWB effect of three types of engagement. The monetary value of SWB was calculated using the income compensation (IC) approach. Marsh *et al.* (2010^H) suggested that doing sport at least once a week generates SWB the equivalent to a £11,000 increase in household income. This estimate should be viewed with caution, as noted by the authors, as the IC approach is in its infancy and it faces key methodological challenges (Marsh *et al.*, 2010^H).
- Fujiwara *et al.* (2014) quantified and valued the wellbeing and social impacts of culture and sport. This work included secondary analysis of Understanding Society data and sought to develop Government's understanding of the association between culture and sport engagement and a range of social outcomes, placing a monetary value on significant impacts where identified³.

3.3.4 Conclusions on Sport and Wellbeing

Overall there are a relatively small number of studies examining the relationship between sport and exercise and wellbeing. The quality of the evidence base is also weaker than for the other outcome areas reviewed in this study. The lack of a standardised definition of wellbeing and the cross-disciplinary nature of wellbeing present considerable challenges when attempting to measure the concept. Most of the literature on wellbeing is drawn from cross-sectional studies. None of the studies reviewed demonstrated evidence of a direct link between sport and exercise and wellbeing and causality is difficult to establish.

Wellbeing in the literature is typically SWB. As such it is not a social impact. Nevertheless, it is related to a number of social impacts - wellbeing has both physical and mental health dimensions and the links with psychological health are particularly close. In addition, relationships exist with other areas of social impact such as social capital. The main problem is disentangling the contribution of sport and exercise to wellbeing from the relationships to outcomes in other areas. It has been suggested that more than one variable contributes to the causality of SWB and that

³ References: Fujiwara, D., Kudrna, L. and Dolan, P. (2014) Quantifying the Social Impacts of Culture and Sport.
<https://www.gov.uk/government/publications/quantifying-the-social-impacts-of-sport-and-culture>
 Fujiwara, D., Kudrna, L. and Dolan, P. (2014) Quantifying and valuing the Wellbeing Impacts of Culture and Sport.
<https://www.gov.uk/government/publications/quantifying-and-valuing-the-wellbeing-impacts-of-culture-and-sport>

sport and exercise may play a role in combination with other social factors. The evidence suggests that the opportunities for social interaction provided by sport participation play a part in contributing to wellbeing effects. A small number of studies have also attempted to value SWB and participation in sport and exercise.

There is little or no evidence of the differential effects of participation in sport and exercise on wellbeing for various sub groups of the population, although it is clear that there are differentiated effects depending on individual versus team sports.

Evidence is primarily concerned with the positive effects of sports participation on wellbeing but there is no evidence of any possible negative effects, for example the effect of sporting injuries on wellbeing.

3.4 Sport and Crime

The systematic review identified 40 studies of the relationship between sport and exercise and crime/delinquency, comprising:

- A 1 meta-analysis
- C 6 cohort studies
- D 1 time series study
- E 1 case-control study
- F 17 cross-sectional studies
- G 6 case studies
- I 8 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, three further narrative reviews were included as known texts. These were the Audit Commission (2009^I); Nichols, (2007^I) and Sport England (2008c^I). In total, 43 sources were included in the crime review. The literature relating to sport, exercise and crime is summarised in Table A7.3 in Appendix 7.

Much of the literature on the links between increased sport and exercise on the one hand and reduced crime, delinquency and vandalism on the other hand focuses on young people. This is understandable, because, as the Commission for Social Justice (1994: 50) makes clear, 'young men between the ages of 17 and 25 account for 70 per cent of all adults convicted or cautioned for a criminal offence.' Burton and Marshall (2005^F) suggest that entering the criminal justice system at a young age is associated with an increase in future offending, so many interventions are designed to prevent this process from starting.

The literature is divided between a majority of studies (typically longitudinal and cross-sectional studies) that assess the effects of sports programmes alongside other moderating, protective and risk factors, including particularly gender and other non-sport extracurricular activities; and a minority of studies (typically the case evaluations) that focus mainly on sports participation. Whilst the subjects for a clear majority of studies (again typically longitudinal and cross-sectional studies) are young people generally, minorities of studies focus on either sports participants, or delinquents. This reflects the difference between sport/exercise opportunities that are provided for general populations - the subject of most longitudinal and cross-sectional studies - and sport/exercise programmes specifically designed for at-risk youth, to promote pro-social behaviour or reduce anti-social behaviour - the subject of programme evaluations.

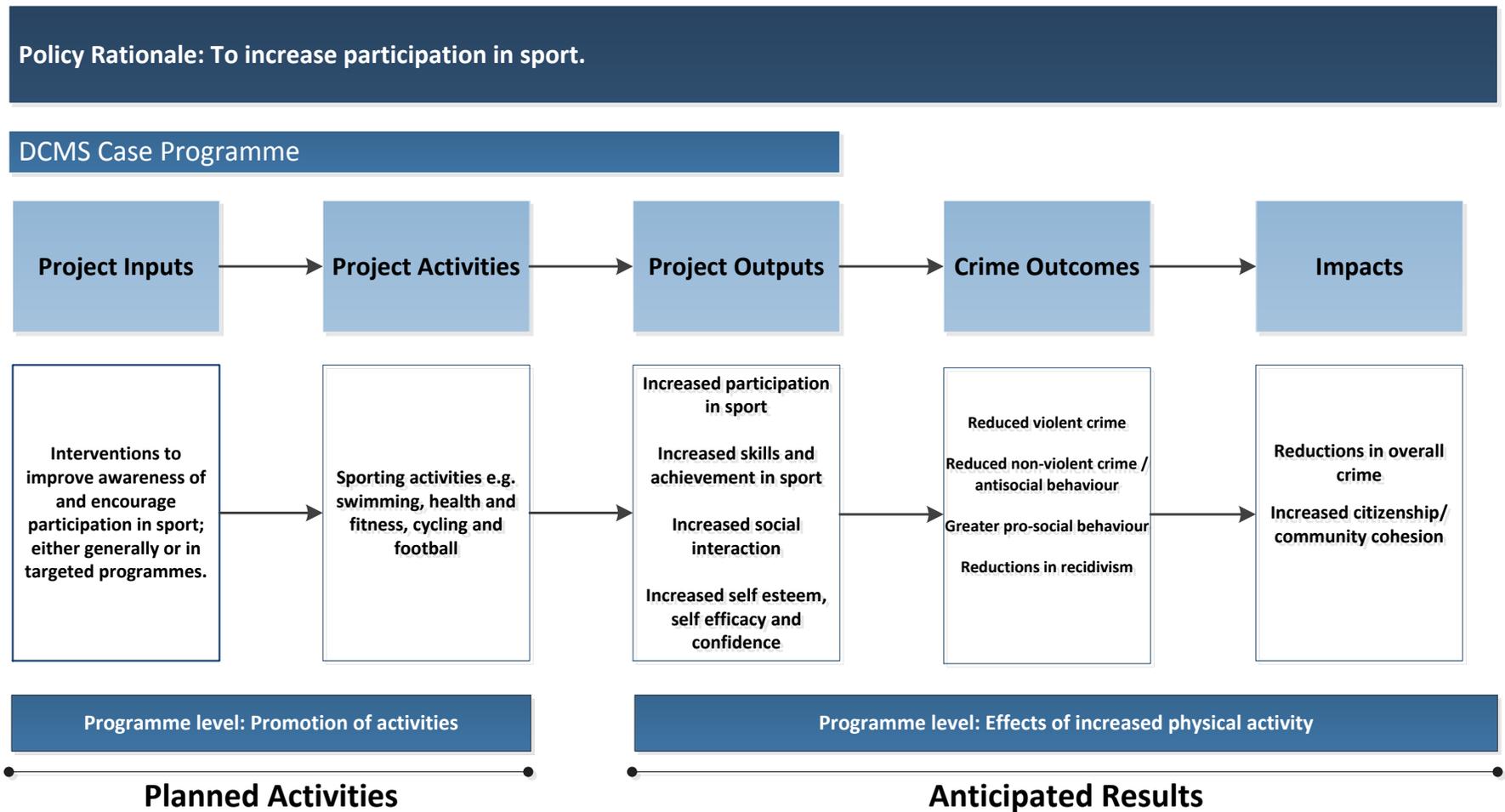
3.4.1 Conceptual issues: Crime

A conceptual logic chain is reported below in Figure 3.5.

Conceptually a distinction needs to be made between young people generally and young people at risk. The former are exposed to risks of crime and delinquent behaviour, but not to the same degree as the latter. As noted above, the literature divides accordingly between studies of young people generally, and studies of at-risk young people. The relationship for young people generally is one of deterrence or catharsis, whilst for at-risk young people it is a model of diversion from crime/delinquency. At the heart of both models is the theory of social learning, through which pro-social and anti-social behaviours are moderated by interactions with others.

Figure 3.5

DCMS Social Impacts of Participation in Sport: Indicative Crime Logic Chain



Various authors suggest models for the deterrence effect of sports participation on young people's anti-social behaviour potential (e.g. Hartmann & Massoglia, 2007^C; Begg *et al.*, 1996^C; Fauth *et al.*, 2007^C; Moesch *et al.*, 2010^F; McKenney and Datillow, 2001^F). Nichols (2007^I) offers arguably the most authoritative review of the theoretical processes linking participation in sport and exercise with less crime, for at-risk youth. This is summarised as a model of 'personal growth directed by values', which includes consideration of:

- **risk factors**, i.e. individual, family, school, peers, and community; examples being broken family, parental history of criminal behaviour, delinquent peers, unstructured socialising, gender, socioeconomic class, employment status, ethnicity.
- **protective factors**, i.e. personal factors such as self-esteem and personality and social factors such as external support from school and community.
- Further protective and risk factors provided through a **medium** with which the at-risk person identifies, such as sport and exercise in settings which are safe, supportive, collective, with positive social norms. For general youth populations this takes the form of **free-choice participation opportunities**. For at-risk youth it comprises **structured programmes** (often with referrals), in which the at-risk person is guided structurally through physically, socially and emotionally challenging experiences which generate a sense of personal achievement (Wilson & Lipsey, 2000^A) NB moderating factors such as breadth of extra-curricular activities (i.e. mix of sport and non-sport activities), size of school, and the quality of leaders, nurturing the values required for pro-social behaviour with imposed moral codes.
- Three possible effects: **counteract negative influences** (i.e. displacement or motor charge models) such as boredom, natural aggression and demand for physical challenges; **promote positive psycho-social attributes and skills** (i.e. social learning model) such as social skills, locus of control, self-esteem, self-efficacy, self-confidence, self-discipline, pro-social behaviour, teamwork; and/or **promote anti-social attributes**, such as aggression, violence and rule breaking.
- leading to **beneficial or detrimental personal developmental outcomes** - and conforming or deviant behaviour.
- contributing to changes in **crime/delinquency**.
- Pro-social values and personal growth become **self-sustaining** and prevent young people and divert at-risk young people from crime for more than just the short-term. This is facilitated by appropriate exit routes into longer term sport and exercise opportunities, and possibly other exit routes, including employment, housing and new peers.

Some authors (Rutten *et al.*, 2007^F; Jenkins and Ellis, 2011^F) make a distinction between positive and negative theories regarding sports programmes - the former modelling pro-social development outcomes from sport participation, the latter suggesting that organised sport may promote anti-social behaviour because sport is 'based on competition, self-interest and suspension of relational responsibility, while moral deliberation is reduced by formal and informal rules' (Rutten *et al.*, 2007^F:256).

Most attention in the relationship between sport and crime is on youth crime rather than crime more generally (Coalter, 2005^I). The role of sport and exercise is seen as one medium through which the protective factors might be provided. It is a medium commonly seen to be attractive as a hook to engage many young males - the primary at-risk group. However, other mediums might

serve the same purpose for specific groups - including other cultural mediums such as art and dance.

Risk Factors

Morris *et al.* (2003⁹) review the literature on the effects of sport on a range of different risk factors, i.e. individual (including cognitive and emotional skills and boredom), family, school, and community:

Individual

- Perinatal and postnatal difficulties.
- Anti-social personality (includes impulsiveness, beliefs and attitudes favourable to deviant or anti-social behaviour, restlessness, risk-taking).
- Anti-social behaviour (includes displays of aggressive and/or violent behaviour, previous offending, substance misuse).

Family

- Parental criminality.
- Poor family management practices (poor supervision/monitoring, harsh or inconsistent discipline).
- High levels of family conflict.
- Lack of parental involvement (including neglect and low parental warmth).

School

- Academic failure.
- Truancy and low commitment to schooling.
- Early school leaving and frequent school changes.

Peers

- Poor social ties (few social activities, low popularity).
- Mixing with delinquent siblings and peers.
- Gang membership.

Community/neighbourhood

- Poverty.
- Community disorganisation.
- Availability of drugs and firearms.
- Exposure to violence and crime within the community.

Protective Factors

Witt and Caldwell (2010¹) summarise the protective factors of recreation programmes designed for youth development - see Figure 3.6. This includes factors for the individual as well as the programme deliverer.

Figure 3.6 Protective factors in youth development programmesSource: Witt and Caldwell, 2010^l, p21

Supports	Opportunities	Programs/Services
<i>Affirmation and Assistance to Set and Accomplish Goals</i>	<i>Chances to Learn, Earn, and Contribute</i>	<i>Receipt of Instruction and Care and Use of Facilities</i>
Healthy Relationships Nurturance Friendship Role Models, Resources and Networks Options assessment Planning Assessing resources Financial Connections High Expectations and Clear Standards Guidance Monitoring	Quality Instruction Training and Informal Learning Learning and building skills Exploration and reflection Expression and creativity Leisure and play Challenging Roles and Responsibilities Employment and earned income Influence and advocacy Interaction and membership	Human Services Educational Vocational Mental health Health Social Recreation and leisure Law enforcement Rehabilitation Infrastructure Transportation Public maintenance Retail Housing Stable Places Homes Neighborhoods Community meeting places
Main Actor: the provider	Main Actor: the individual	Main Actor: the provider

3.4.2 Criminal Behaviour

Nine studies measure the association between sport/exercise participation and incidence of crime. Wilson and Lipsey (2000^A) report lower recidivism by juvenile delinquents associated with wilderness activities. Nelson and Gordon-Larsen (2006^F) found that those who engaged in relatively more frequent and intensive sports participation were less likely to engage in a variety of criminal behaviours, including drunk driving, and use of illegal drugs other than marijuana. Veliz and Shakib (2012^D) found a weak but significant beneficial effect of sports participation at schools on fewer incidents of serious crime and suspensions on school grounds. Caruso (2011^F) found sports participation to have a strong beneficial relationship with lower property crime and juvenile crime. Sport England (2002^G) found evidence of reduced youth offending (sometimes considerable, e.g. 40%) during the period of one programme. Nevill and Poortvliet (2011^G) found evidence of reduced youth crime in one programme area and reduced re-offending by participants in two other programmes; and calculated returns on investment for the three programmes. Vinluan (2005^I) does not cite evidence but claims that after-school programmes hosted by parks and recreation departments decrease juvenile crime and violence, drug use, smoking and alcohol abuse, and teen pregnancy.

Hartmann & Massoglia (2007^C) found no relation between sport/exercise and a general measure of delinquency over time, because whilst sport/exercise participation was associated with lower levels of some deviant behaviour - shoplifting, work fraud and minor citations - it was associated with higher levels of drunk driving, speeding, and angry or violent behaviour at work.

Begg *et al.* (1996^C) found an association between high sports participation at the age of 15 and higher delinquency at the age of 18. A similar result regarding delinquency was identified by Fauth *et al.* (2007^C).

3.4.3 Drug Taking

Four studies (two cohort, two cross section) include the relationship between sport/exercise participation and illicit drug taking. McElrath and O'Malley (2011^C) identified an association between higher sport/exercise participation and lower marijuana and other illicit drug use at age 18, with increases in sport/exercise related with decreases in marijuana and other illicit drug use by age 21/22. Dawkins *et al.* (2006^C) and Rhea and Lantz (2004^F) identified a relationship between higher sports participation and lower marijuana use, while Nelson and Gordon-Larsen (2006^F) found a relationship between more frequent and intensive sports participation and lower use of drugs other than marijuana. However, Fauth *et al.* (2007^C) found an association between higher sports participation and higher substance (marijuana and alcohol) use.

3.4.4 Alcohol

Sport/exercise is shown by three cohort studies to have a largely non-beneficial relationship with illegal alcohol consumption by young people. McElrath and O'Malley (2011^C) found that higher sport/exercise participation was associated with higher age 18 alcohol use, with team sports participation having the strongest relationship with higher age 18 alcohol use. As reported above, Fauth *et al.* (2007^C) found an association between higher sports participation and higher substance (marijuana and alcohol) use. Dawkins *et al.* (2006^C) found a relationship between higher sports participation and higher alcohol consumption for white students and black male students, but lower alcohol consumption for black female students.

3.4.5 Violence

The literature, mostly from cross-section studies, in the main suggests a non-beneficial relationship between higher sports participation and more violent behaviour. The one exception is Rhea and Lantz (2004^F), who found a relationship between higher sports participation and fewer assaults for males.

Mixed evidence was found by Jiang and Peterson (2012^F) - whilst non-immigrant youth with a mix of sport and non-sport participation had less violent behaviour; first and second generation immigrant youth with the same mix of participation had more violent behaviour; and for the latter, sport participation alone was associated with more violent behaviour. Moesch *et al.* (2010^F) used cluster analysis to identify that whilst non-violent adolescents are more involved in individual aesthetic sports; violent adolescents are more involved in body contact sports. Gardner *et al.* (2009^F) found no association between sports participation and violent delinquency.

An association between higher sports participation and more violent behaviour was found by Wright and Fitzpatrick (2006^F) and Nelson and Gordon-Larsen (2006^F). Endresen and Olweus (2005^C) found an increasing association over two years between power sports participation and violent and non-violent anti-social behaviour among young males - the strongest association being for boxing and weightlifting, with weaker associations for wrestling and martial arts. Furthermore, there was no evidence that participants were already pre-disposed to anti-social behaviour. Caruso (2011^F) found a weak relationship between higher sports participation and

more violent crime. Burton and Marshall (2005^F) found a strong correlation between sports participation and aggressive behaviour.

3.4.6 Pro-social and Anti-social Behaviour

The weight of evidence from 13 studies suggests that sports participation has a beneficial association with lower anti-social behaviour, although there are five studies with more neutral or contrasting results. Rhea and Lantz (2004^F) found a relationship between sports participation and less trouble at school and trouble with police for males. Langbein and Bess (2002^F) found that for most schools widespread sports programme reduced serious incidents and suspensions, and particularly for larger schools. Sandford *et al.* (2008^G) found a significant reduction in behaviour referrals for participants in a sport programme, from a baseline mean of 77.2 to a final mean of 41.2; and teacher perceptions of improved behaviour and self-esteem of participants. Howie *et al.* (2010^F) found that children who participated in sports (or other activities) were more likely to try to resolve conflicts and show respect for teachers and neighbours than children who did not participate in any out-of-school activities. Rutten *et al.* (2007^F) found that 8% of the variance in anti-social behaviour and 7% of the variance in pro-social behaviour is favourably attributable to sports teams and coaches, largely through a strong socio-moral reasoning effect. Jenkins and Ellis (2011^F) found favourable perceptions from combat sport participants of the effects of their participation on social relations and personal behaviour. Wright *et al.* (1998^E) found participants in a summer programme for at-risk youth had significantly increased self-perceptions, scholastic competence and social competence, compared with a control group and participants in a traditional recreation programme. Carreres-Ponsoda *et al.* (2012^F) found that youths participating in out-of-school sport programmes had significantly higher levels of self-efficacy, pro-social behaviour and personal and social responsibility than youths participating in no activity.

Metzger *et al.* (2009^F) found no clear relationship between sports participation and problem behaviour, either on its own or in combination with participation in other organised activities in school or the community. McKenney & Dattilo (2001^F) found temporary beneficial effects of sports participation on the pro-social behaviour of delinquents, but no clear effect on anti-social behaviour. Gardner *et al.* (2009^F) found that male non-violent delinquency was higher for sports participants than for participants in other organised activities, mediated by higher peer deviance and more time in unstructured social activities.

Sagar *et al.* (2011^F) found a joint effect of length of competitive sports participation and fear of failure on greater anti-social behaviour, both within sport and at university. Watkins (1999^F) found that organised sport participants (particularly in popular, team and contact sports) committed significantly more delinquency than non-participants, although sport is a minor delinquency risk factor, accounting for less than 2% of total delinquency variance. Important mediating variables are age, gender, location of school and level of instruction, as well as other risk factors.

3.4.7 Intervention Programme Design

The Canadian Parks/Recreation Association (1996^G) identifies a number of programme-related constraints to engaging at-risk youth. These include common characteristics of sport programmes such as a rigid structure and regulation of activities, competition with elimination, and adult control. They suggest that at-risk youths would prefer more flexibility, less rules, less competition and more voice and control over their activities - requirements which are typically serviced by alternative, non-traditional activities.

Witt and Caldwell (2010¹) suggest that any sport/exercise programme designed for the personal and social development of young people, whether at risk or more general, should be intentional - i.e. designed specifically to produce developmental outcomes. Sandford *et al.* (2008⁹) suggest the following design recommendations: locate project activities outside the normal school context, work with pupils to select activities, establish positive relationship between leaders and pupils, give pupils the opportunity to work with and for others. Similar conclusions are reached by Morris *et al.* (2003⁹), who suggest three critical factors for the success of programmes for at-risk youth: the involvement of youth in the processes of programmes, including leadership roles; the provision of a safe and engaging environment, with the sports leaders being a key influence on this; and the backup of community provision to provide an exit route for continued participation outside the programme. Haudenhuyse *et al.* (2012⁹) explore reasons for a positive influence of sport on vulnerable youth, and identify some key issues in programme delivery, i.e. a perceptive attitude of participants' wellbeing; a motivational climate; authority relationships; socio-psychological competences in understanding and including everyone; the sport's model with competition one, element which is important for some participants; working towards competence not just in sports technical skills but also in enjoyment of activities and nurturing youth development; and the coach's cultural capital.

Witt and Caldwell (2010¹) identify detailed features of positive youth development settings, see Figure 3.7.

Figure 3.7 Positive elements of programme design

Source: Witt and Caldwell, 2010¹, p22

Feature	Descriptors
Physical and Psychological safety	Safe and health-promoting facilities and practices that increase safe peer group interaction and decrease unsafe or confrontational peer interactions.
Appropriate Structure	Limit setting; clear and consistent rules and expectations; firm-enough control; continuity and predictability; clear boundaries; and age-appropriate monitoring.
Supportive Relationships	Warmth; closeness; connectedness; good communication; caring; support; guidance; secure attachment; and responsiveness.
Opportunities to Belong	Opportunities for meaningful inclusion, regardless of one's gender, ethnicity, sexual orientation, or disabilities; social inclusion, social engagement, and integration; opportunities for sociocultural identity formation; and support for cultural and bicultural competence.
Positive Social Norms	Rules of behavior; expectations; injunctions; ways of doing things; values and morals; and obligations for service.
Support for Efficacy and Mattering	Youth based; empowerment practices that support autonomy; making a real difference in one's community; and being taken seriously. Practice that includes enabling, responsibility granting, and meaningful challenge. Practices that focus on improvement rather than on relative current performance levels.
Opportunities for Skill Building	Opportunities to learn physical, intellectual, psychological, emotional, and social skills; exposure to intentional learning experiences; opportunities to learn cultural illiteracies, media literacy, communication skills, and good habits of mind; preparation for adult employment; and opportunities to develop social and cultural capital.
Integration of Family, School, and Community Efforts	Concordance; coordination; and synergy among family, school, and community.

Nichols (2007^l) concludes that the main protective factors, particularly the quality of leadership and mentoring, are typically considered to be more important than the medium of sport and exercise. The leader is a critical agent for changes in pro-social and anti-social behaviour.

3.4.8 Other Considerations

The potential issue of self-selection suggests that delinquents don't choose to do sport, whilst young people with pro-social attributes do sport. However, no studies support this hypothesis.

Different activities may have different effects - e.g. team sports (social skills); individual sports (cognitive benefits); combat sports (aggression). A couple of studies examine specific sports, including Endresen and Olweus (2005^c) who looked specifically at power sports. However, Morris *et al.* (2003^g:71) suggest that choice of activity has no systematic effect on programme outcomes.

Even programmes designed for at-risk youth are often not specific to delinquents. Opening such programmes up to other young people increases any potential favourable effects of pro-social peers.

3.4.9 Conclusions on Sport and Crime

Whilst there are a range of theoretical and empirical claims for the crime-related impacts of sport, the weight of evidence suggests the most convincing evidence of a beneficial relationship between sport and exercise is in the reduction in crime. However, the evidence review also points to the need to differentiate more between the effects of sport and exercise on the general population and young people who are at risk.

Any relationships between sport/exercise and crime/anti-social behaviour are not direct, but via moderating protective factors, particularly the quality of leadership, and effects on risk factors. A key mediating factor in the relationship is age - young people who commit crime are far more likely than young people who do not commit crime to exhibit criminal behaviours throughout their lives. The focus of many studies around youth and in particular at-risk youth is reflected in the strongest evidence base to be found for interventions in this area.

The evidence base points to sports and exercise activities promoting anti-social as well as pro-social behaviours. Examples of the more counter-intuitive effects of sport in increasing anti-social behaviours were in relation to team sports and power based sports (e.g. weightlifting and boxing).

Evidence is largely short term or cross-sectional. There is a lack of longer term evidence of the relationships examined.

3.5 Social Capital

The systematic review identified 24 studies of the relationship between sport and exercise and social capital, comprising:

- C** 3 cohort studies
- D** 1 time series study
- E** 1 case-control study
- F** 6 cross-sectional studies
- G** 11 programme evaluations and case studies
- I** 2 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, three further references were included as known texts. These were two narrative reviews (Coalter and Allison, 1996¹; Sport England 2008b¹) and a case study (Bunde-Birouste *et al.* (2012^G). In total 27 sources were included in the social capital review. The literature relating to sport, exercise and social capital is summarised in Table A7.4 in Appendix 7.

3.5.1 Conceptual Issues: Social Capital

There are many definitions of social capital both within academia and across international institutions but generally there is convergence towards definitions which emphasise social networks and shared civil norms and values such as trust and reciprocity.

A conceptual logic chain is reported in Figure 3.8. The following process and conceptual issues are identified in the literature:

- Participation in sport/exercise programmes is either a response to general opportunities, or a response to a specific programme designed to facilitate social capital.
- Development of social relationship skills: including self-esteem, self-efficacy, cooperation, reciprocity, a sense of belonging.
- Bonding capital: greater social connectedness, networking, social interaction - largely among a fairly homogeneous population.
- Bridging capital: greater awareness of others, better understanding of others, greater social inclusion/connectedness and mixing across heterogeneous population groups.
- Linking capital: ties between people in dissimilar social situations, enabling individuals and groups to access formal institutions.
- Outcomes: reduced social and ethnic tensions, reduced problem behaviour; more collective action and community involvement, NB volunteering.

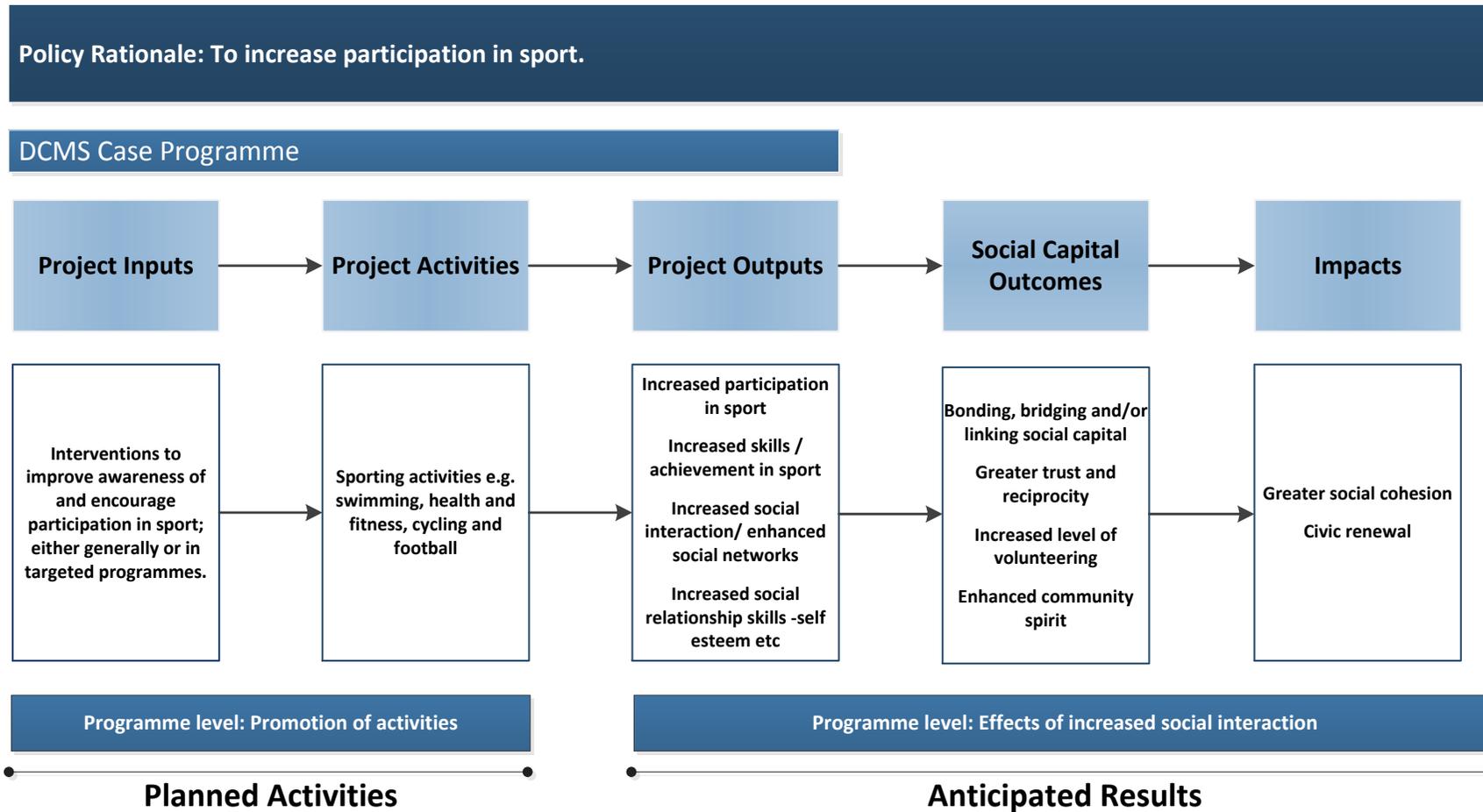
There is debate about the extent to which social capital is a feature of a collective neighbourhood or community to which an individual belongs, as distinct from the social networks or social support that are characteristics measured at an individual level. Theoretically social capital is considered both as an attribute of the individual and the community, yet indicators of social capital are widely measured at the individual level, not the community level.

Social capital is often seen as the networks that a person possesses which he or she can use for purposes of social integration. However, some commentators have argued it is more the *disposition* to create, maintain and develop such networks that constitutes social capital. With

regard to sports participation, the development of social relationship skills such as self-esteem, self-efficacy, increased cooperation and reciprocity and the feelings of a sense of belonging are likely to be important when measuring the relationship between sport and social capital.

Figure 3.8

DCMS Social Impacts of Participation in Sport: Indicative Social Capital Logic Chain



The weight of evidence supports a positive effect of sport on social capital.

3.5.2 Social Inclusion

Tonts (2005^F:142) found that sport is important 'as a forum for the formation and maintenance of networks'; and social interaction was the most important reason for being involved in sport for 82% of surveyed households - supported by large majorities of respondents supporting positive statements about the social connections facilitated by sport. Tonts' evidence supports sport's contribution to both bonding and bridging capital - racial integration being part of the latter - through both participation and volunteering. Perks (2007^F) found that 11 measures of community involvement as an adult were positively associated with previous participation in youth sport, including volunteering, and socialising factors. This was the case for all age groups, suggesting that the beneficial effect of youth sport on community involvement persists through age. O'Connor and Jose (2012^C) found that participation in sport led to later benefits of social support and wellbeing for New Zealand European youth. Bloom *et al.* (2005^F) stress the importance of sport in promoting social cohesion, inclusion and social capital. Lullo & Van Puymbroeck (2006^I) suggest that sport can increase integration into social settings and help improve peer relations for children with ADHD, thus increasing a child's happiness and self-confidence.

Holt *et al.* (2009^G) identify that it is not sport per se but rather interactions with peers, parents and coaches which help to develop the life skills of young people. Sherry & Strybosch (2012^D) review the improvements in bonding and linking social capital arising from participation in a community street soccer programme - including the influence of coaches and peers, social support from this network, communications skills, self-confidence, self-esteem, motivation for personal and social development, cross-cultural exchange, self and group identity, reductions in drug and alcohol abuse, and health improvements. Spaaij (2012a^F) suggests that a sports programme in Brazil not only facilitates a network of people from similar socio-economic backgrounds, but also helps create and maintain linkages with institutional agents who can offer information and resources which would not otherwise be available. The latter is potentially critical in compensating for social and economic disadvantage, but their sustainability without external support mechanisms is doubtful.

In a different national context, Burnett (2009^G) cites evidence of one sports development programme reducing social distance between children and parents, and increasing self-esteem and a sense of self-worth for unemployed volunteers. In earlier work Burnett (2006^G) reports positive results concerning a programme's participants' social capital, including social and emotional skills, reciprocity, and relationships. Peacock-Villada *et al.* (2007^G) identify improvements in resilience and self-efficacy among young participants in a soccer programme in Zambia and South Africa. Misener and Doherty (2012^G) examine inter-organisational relationships in sports clubs and find considerable practice and potential in relation to active social capital among sports clubs.

A couple of papers referred to less favourable findings regarding sport and social inclusion. Tonts (2005^F) found instances of sport reinforcing social and economic structures, with golf, for example, being exclusive but football being more egalitarian. In a study of multiple cases, Waring and Mason (2010^G) conclude that providing new opportunities with an 'open access' approach is inadequate in achieving social inclusion - other resources are needed to overcome significant participation barriers.

Coalter and Allison (1996^I) suggest that programme evaluations have highlighted problems with sustaining community development through sport, including: adverse consequences of

withdrawing professional support; misinterpretation of programmes as social control rather than community development; the tendency for existing participants to dominate programme participation, rather than new participants; and the danger of programme delivery concentrating on sports development rather than community development.

3.5.3 Disabled People

For a specific subgroup, disabled people, Hanson *et al.* (2001^F) found that sports participants had higher scores for social integration than non-participants. Ozer *et al.* (2012^E) found positive effects of unified Special Olympics soccer programme on social competence, problem behaviour and friendship activity for youths with intellectual disabilities; and improved attitudes of non-disabled youth towards disabled participants.

3.5.4 Volunteering

Studies have shown that sports participation and sports volunteering are essentially complementary, driven generally by the same factors. Since volunteering is a form of social capital, this demonstrates a positive association between sports participation and social capital. Furthermore, Harvey and Levesque (2007^F) found a strong positive relationship between sports volunteering and other measures of social capital, although they were unable to identify the direction of causation. Kay and Bradbury (2009^G) also found strong evidence of individual benefits and social connectedness for participants in a programme to develop sports volunteering for young people.

3.5.5 Ethnic Integration

Hallinan & Judd (2009^G) focus on a specific aspect of social capital - ethnic integration - and conclude that overt racism has declined but this has not changed power relations on ethnic lines within one sport, Australian Football, where Indigenous Australians have not attained positions of power. Lyras (2007^G) found positive signs of changed communal attitudes among participants in a sport's programme in Cyprus, in a sensitive political environment. Vermeulen and Verweel (2009^G) found clear signs of mainly bonding but also some bridging in two locations with multi-ethnic participants, but challenge the simplicity of these social capital concepts. Nathan *et al.* (2012^G) evaluated a programme for refugees and found that participants reported being significantly more 'other group' orientated than a comparison group, with significantly less peer problems and higher pro-social behaviour. These effects were enhanced by regularity and duration of attendance. Spaaij (2012b^C) investigated Somali participants in football clubs, and whilst finding strong evidence of bonding social capital, e.g. with different clans; there was more weak/mixed evidence of bridging and linking social capital.

3.5.6 Political Engagement

One study (Braddock *et al.* 2007^C) found a relationship between participation in varsity individual sports and greater political participation (i.e. voting) by students, but no effect for varsity team sports.

3.5.7 Programme Design Implications

Schulenkorf and Edwards (2012^G) identify five sets of recommendations to fulfil the potential for social development from sports events in a developing country with disparate communities: concentrating on youth as catalysts for change; ethnically mixed team sports; combining large-scale events with regular sport programmes and exchanges; providing event-related social

opportunities; and leveraging from events to generate additional political, educational, promotional and financial benefits.

3.5.8 Programme Evidence

Some authors (Bailey, 2005¹; Coalter and Allison, 1996¹) point out not so much gaps in the evidence as a widespread lack of evidence, particularly because of the failure of programme managers to undertake systematic monitoring and evaluation of the outcomes of their programmes.

3.5.9 Conclusions on Sport and Social Capital

Most of the evidence reviewed points to sports and exercise programmes contributing to social capital through encouraging social interaction and the development of social relationships and networks. However, given the reliance on cross-sectional analysis and programme evaluations there remains uncertainty about the direction of causal relationships between participation in sport and exercise and social capital.

Overall the evidence supports the premise that sport enhances both bonding and bridging social capital, although there is perhaps more evidence indicating that sport participation generates bonding capital by increasing social connectedness and a sense of belonging amongst fairly homogeneous populations.

A number of studies demonstrate that participation in sport helps to bring people from different backgrounds together and can encourage understanding of others, help to change attitudes and overcome social barriers. However, evidence of more longstanding or fundamental change in terms of social inclusion and community cohesion is generally weaker, and particularly in relation to ethnicity, it is evident that some barriers present significant challenges and are difficult to overcome.

Sports participation and sports volunteering are closely linked and generally seen as complementary in the literature. Volunteering is seen as a form of social capital and as such demonstrates a positive relationship between sports participation and social capital. The reciprocity and trust generated by sports volunteering also plays a particular role in sustaining and generating levels of social capital and sports participation. Within the literature there is evidence of a strong positive relationship between sports volunteering and other measures of social capital, although the direction of causation was not established.

There is no evidence on the differential impacts of different sports on social capital. Other untested issues include the dose response relationship - e.g. how much sport, how often, and for how long do you have to do it in order to increase social capital?

3.6 Sport and Education

The systematic review identified 25 studies of the relationship between sport and exercise and education benefits, comprising:

- A 2 systematic reviews
- B 1 randomised control trial
- C 8 cohort studies
- E 2 case-control studies
- F 11 cross-sectional studies
- I 1 narrative review

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, a further reference was included as a known text (Southall *et al*, 2013^F). In total, 26 sources were included in the education review. The literature relating to sport, exercise and education is summarised in Table A7.5 in Appendix 7.

3.6.1 Conceptual Issues: Education

A conceptual logic chain is reported in Figure 3.9. The following conceptual issues are identified in the literature:

- Participation in sport/exercise programmes, either as a response to general opportunities, or in response to a specific programme designed to facilitate education benefits.
- Development of cognitive skills including executive/planning, attention, simultaneous and successive tasks; self-esteem, self-efficacy, self-regulation, locus of control; and/or social competence; and/or development of social capital; and/or identification with and attitudes towards school and school-related values; and/or quest for high peer status. These all contribute to more effective mechanisms for reducing the impact of risk factors.
- Alternatively sports participation diverts student attention from academic programmes, towards different identities.
- Intermediate outcomes: lower anti-social behaviour; higher pro-social behaviour; improved educational behaviour (e.g. attendance).
- Outcomes: changes in absenteeism; school drop-out; academic resilience; education attainment; progression to higher education.

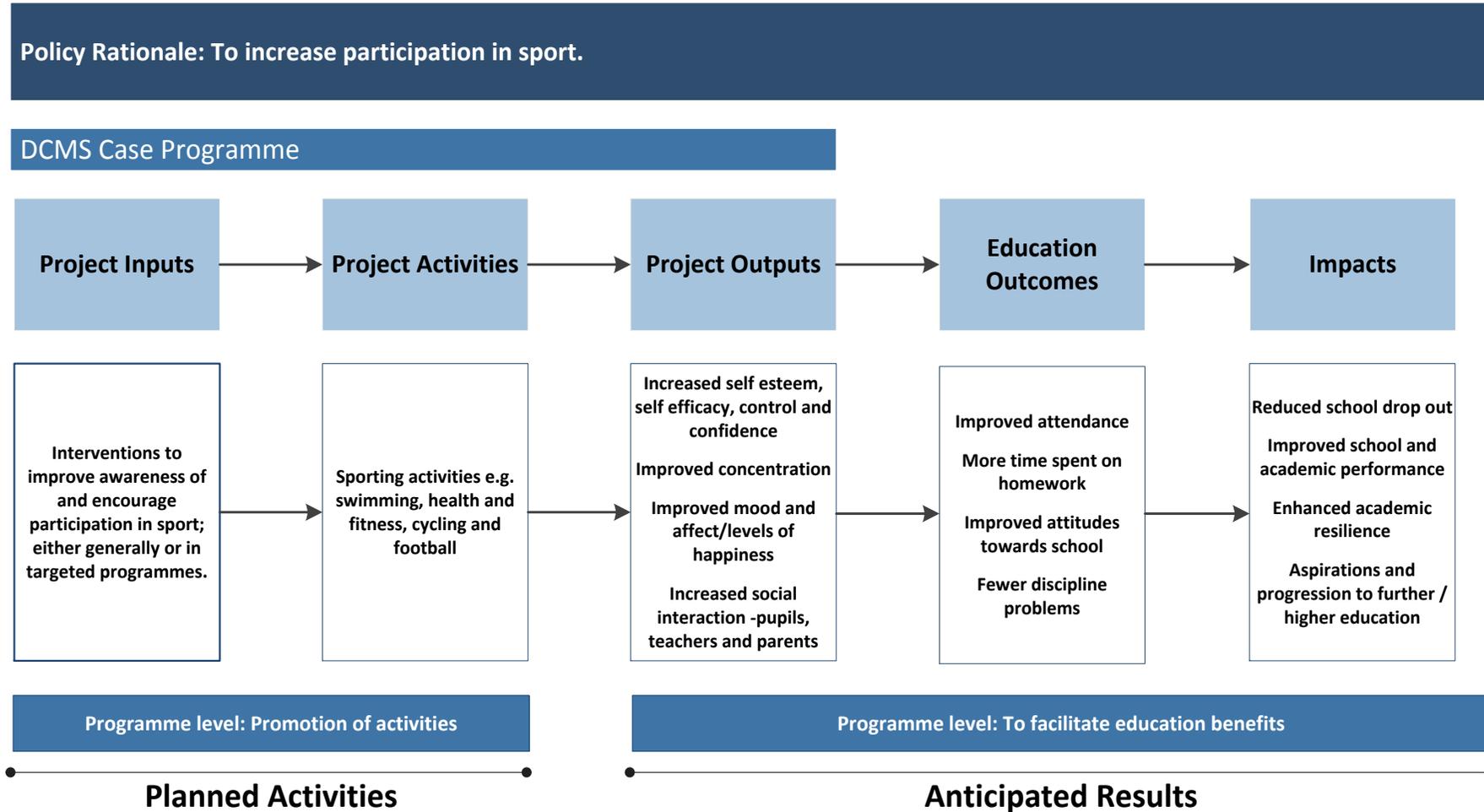
The literature points to three possible routes or pathways by which participation in sport may translate to educational benefits via psychological/affective benefits, cognitive benefits and social capital attributed to sports.

Evidence from the various studies strongly suggests that the impacts claimed are dependent on a number of contextual and pedagogic variables. These include: having credible leadership for programmes, involving young people in decision making, emphasising the significance of social relationships and an explicit focus on learning processes. Factors such as the structure within which learning takes place, adult supervision and parental involvement may also maximise the effectiveness of sporting activity on educational benefits.

The reviewed evidence also indicates that intrinsic factors, such as personal accomplishment through skills development, play a more important role in generating educational benefits than extrinsic factors such as winning.

Figure 3.9

DCMS Social Impacts of Participation in Sport: Indicative Education Logic Chain



The weight of evidence is in support of a positive relationship between sport/exercise and educational intermediate and final outcomes. Intermediate outcomes are the antecedents to final outcomes and include, for example, cognitive skills, social skills, attendance / absenteeism, which are stepping stones to final outcomes such as educational attainment and progression to further or higher education.

3.6.2 Intermediate outcomes

Centers for Disease Control and Prevention (2010^A:9) detail how physical activity affects the brain, though improvements in the brain's physiology which can be associated with improved attention; improved information processing, storage and retrieval; enhanced coping; enhanced positive affect; and reduced sensations of craving and pain. Centers for Disease Control and Prevention (2010^A) also found positive relationships between physical activity on the one hand and academic behaviour and cognitive skills and attitudes on the other hand. Newman *et al.* (2010^A) identified one study which indicated that students doing bespoke extra-curricular activities related to a sports setting improved their IT skills and independent study skills. However, the importance of the sport setting, as the original incentive, is not identified - e.g. in comparison with alternative settings. Pirrie and Lodewyk (2012^F) found a positive relationship between moderate-to-vigorous physical activity and cognitive planning processes in elementary school students. Marsh & Kleitman (2003^C) found a positive relationship between sports participation (particularly extramural and team sports) and higher self-esteem and more time on homework. Hawkins and Mulkey (2005^F) found positive links between sports participation and pro-academic attitudes, such as for males lower social misconduct, and less likely to be judged by teachers as not giving full effort; and for females less likely to miss classes, and more likely to look forward to core curriculum classes. As well as intrinsic motivations, the requirement for a minimum academic attainment in order to participate in intramural and inter-school sport was found to be a positive incentive. Furthermore, the close relationships with sports coaches facilitate close support and monitoring of academic resilience.

Marvul (2012^F) found that absenteeism was reduced by a five month programme which included sports participation; mediated by better attitude towards education, educational expectations, and emotional, cognitive and behavioural engagement. Yin and Moore (2004^C) found participation in inter-school sport was associated with lower drop-out for boys and girls. Blomfield & Barber (2010^F) found extracurricular participation to be positively associated with higher academic track enrolment, and school belonging. Broh (2002^C) found a positive effect of inter-school sports participation on self-esteem, locus of control, and homework time, demonstrating improved cognitive skills. The study also found evidence of improved social ties between students, parents, and school, demonstrating increased social capital. Yin and Moore (2004^C) found similar effects on higher locus of control and self-esteem, although they did not endure to later adolescence.

Eitle & Eitle (2002^C) found that participating in basketball and football provides social capital for those with cultural disadvantage, although this does not translate into higher educational attainment.

3.6.3 Educational Attainment

A positive association between sport/exercise and academic attainment was identified by Martin (2010^B), Centers for Disease Control and Prevention (2010^A), Newman *et al.* (2010^A). Specifically, students who played organised sport were found to achieve higher numeracy levels than those who did not play organised sport, and students doing bespoke extra-curricular activities related to a sports setting improved their educational attainment in numeracy; Metzger *et al.* (2009^F).

Positive association between sport/exercise and educational attainment was also found for early adolescents; (Mackin & Walthe, 2011^C) for grade 7-12 students (Kim and So, 2012^F) for adolescents participating in three or more PE classes per week (Marsh & Kleitman, 2003^C) for extramural sport and team sports (Davis *et al.* 2011^B) for overweight children (Zeiser, 2011^C) for grade point averages (GPA) of white female basketball players (Broh, 2002^C) for inter-school sport and maths and english grades (Lipscomb, 2007^C) for maths and science test scores (and higher Bachelor's degree attainment expectations) (Cathey, 2008^F) for reading, maths and science scores (Kline, 1997^F) for four measures of education attainment (Fox *et al.*, 2010^F) for high school girls physical activity and sports team participation is positively associated with higher GPA, and for boys only sports team participation is positively associated with higher GPA (Streb, 2009^F) between co-curricular activities and academic performance, but lower for sports than for performing arts or service/leadership clubs (McClendon *et al.*, 2000^E) for a special programme's participants. Morris and Kalil (2004^F) found positive effects on academic achievement and pro-social behaviour from a combination of out of school activities i.e. sport, clubs and lessons, although sport was the common factor in achieving the benefits.

Newman *et al.* (2010¹) warn that the importance of the sport setting, as the original incentive related to other non-sport extra-curricular activities, is not identified - e.g. in comparison with alternative settings - so the exact importance of sport in increasing educational performance is difficult to identify.

Rees and Sabia (2010^C) found no statistically robust association between sports participation and educational attainment. Kline found no association with GPA.

A negative association between sport and academic attainment was identified by Zeiser (2011^C) for black male football players and by Southall *et al.* (2013^F) for Division 1 NCAA basketball players, male and female. Eitle & Eitle (2002^C) found that participation in basketball and football has a negative relationship with attainment scores, whilst playing other sports is associated with higher grades for whites but lower grades for blacks.

3.6.4 College aspirations

A positive association between sport/exercise and aspiration to continue into college education was found by Rees and Sabia (2010^C), Marsh & Kleitman (2003^C) and Hawkins and Mulkey (2005^F). In a longitudinal study Marsh and Kleitman also found a positive association with subsequent university attainment. Blomfield and Barber (2010^F) found extracurricular participation to be positively associated with higher university aspirations.

3.6.5 Conclusions on Sport and Education

Whilst there is a range of theoretical and empirical claims for the educational impacts of sport, the weight of evidence reviewed suggests that perhaps the most convincing evidence of a positive relationship between sport and exercise and education impacts is found in relation to the *affective domain* i.e. through the enhancement of self-esteem, perceptions of competence and achievement etc. and in relation to the *cognitive domain* i.e. through improved concentration and thinking skills. Evidence also suggests that social capital attributed to sports through for example increased social interaction between teachers, parents and pupils is also linked to educational impacts.

With regard to the psychological benefits, there is fairly strong evidence which demonstrates the enhancement of children's self-esteem through participation in sport and physical activity. Many studies have highlighted a positive link between sports participation and a range of benefits which enhance self-esteem such as an individual's perception of competence and achievement,

engagement in meaningful activity, feelings of enjoyment and fun. A number of studies have reported such positive results for young people generally, and also for particular sub groups / populations.

Many of the claimed educational impacts of participating in sport are dependent on a range of contextual and pedagogic variables. When activities are presented in meaningful and relevant ways to pupils then they are likely to appeal to more pupils, and have positive effects on educational behaviour and attitudes. Whilst the evidence highlights many positive associations between sporting activity and affective benefits, less is known about the mechanisms by which such development takes place.

Evidence relating to cognitive benefits focusses on the development of cognitive functioning, learning skills and academic performance associated with participation in sport, the premise being that physical activity stimulates the development of such skills which in turn enhance academic achievement. Evidence from well-designed studies has found positive relationships between physical activity and concentration. However, studies specifically examining academic performance have reported mixed results, with some finding positive links and associations and others finding little or no effect and overall more research on school performance is needed. As with psychological benefits, less is known about the mechanisms by which cognitive benefits are created or how the various sporting activities and contexts within which they take place begin to develop these mechanisms.

Overall the evidence base suggests sport and exercise can have a range of education impacts for young people (and also for particular sub groups) but the level of impact is determined by various social, contextual and pedagogical circumstances. It is likely that there are many factors influencing overall educational achievement and no one explanation (affective, cognitive, social capital) is independently able to link sports participation to all educational outcomes.

3.7 Sport and Multiple Impacts

The systematic review identified 34 studies of the relationship between sport and multiple impacts generally, where more than one social impact is considered. Rather than unpick the separate impacts and deal with these references in the previous sections, we have taken these multiple impact studies as a set. They comprise:

- A 1 systematic review
- B 1 randomised control trial
- C 3 cohort studies
- D 1 time series study
- F 5 cross-sectional studies
- G 5 case studies
- H 1 economic evaluation
- I 17 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. In addition, six further narrative reviews known to the authors were used to complete the review. There were Coalter (2007^l); Cox, (2012^l); Oughton and Tacon, (2007^l); Schwarzenegger et al (2005); Sport England (2008a^l) and Sport England 2008b^l). In total 40 sources were included in the review of multiple impacts. The literature relating to sport, exercise and multiple impacts is summarised in Table A7.6 in Appendix 7.

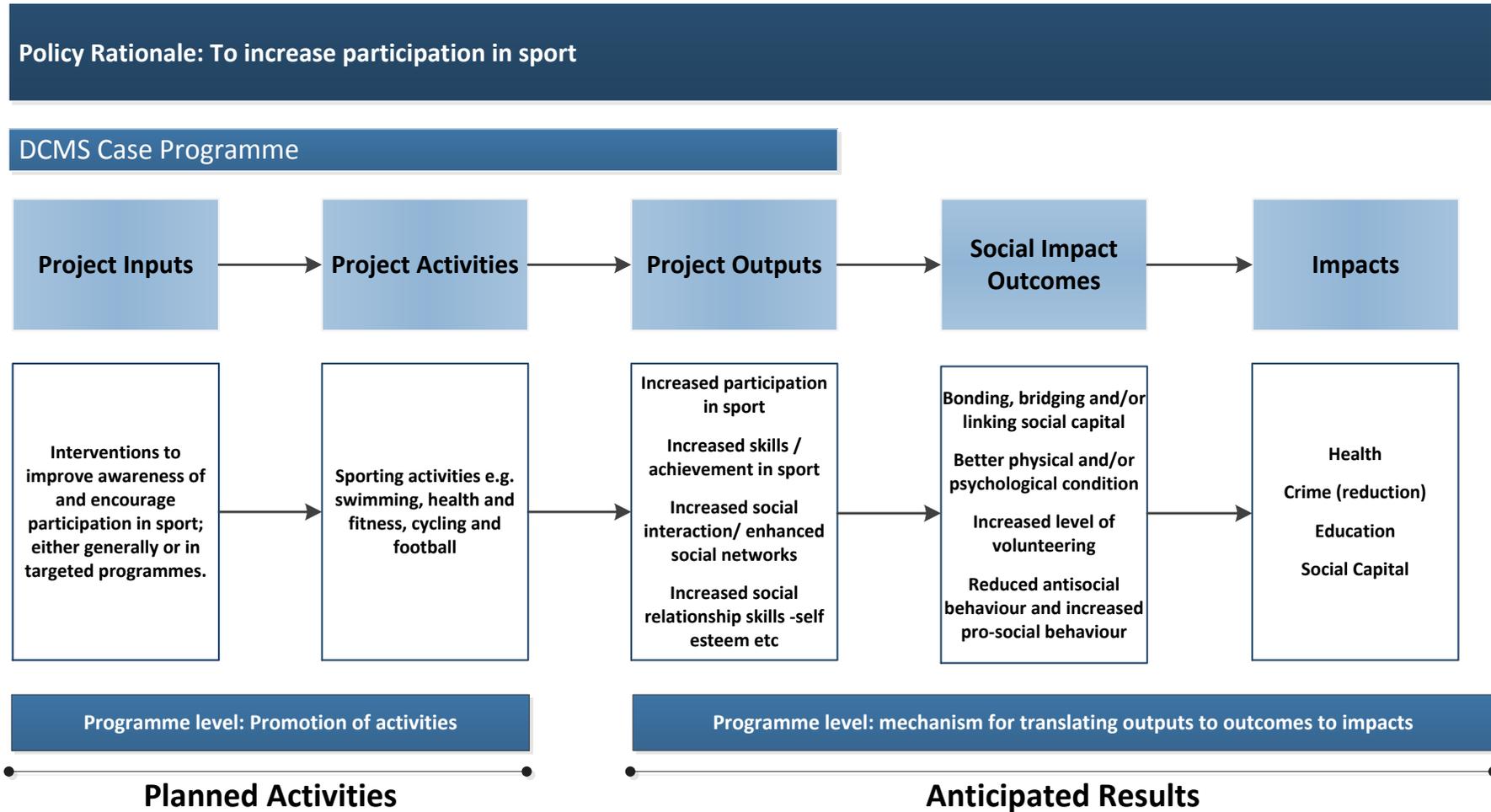
3.7.1 Conceptual Issues: Multiple Impacts

A conceptual logic chain is reported in Figure 3.10. The following conceptual issues are identified in the literature:

- Participation in sport/exercise programmes, either as a response to general opportunities, or in response to a specific programme designed to facilitate multiple social impacts.
- Enhanced fitness and energy levels facilitate all-round greater competence, across a range of activities.
- Development of cognitive skills including executive/planning, attention, simultaneous and successive tasks, self-esteem, self-efficacy, locus of control, communication, resilience; and/or development of social capital, trust and reciprocity; and/or identification with and attitudes towards community institutions and community-related values; and/or quest for high peer status.
- These improvements all contribute to more effective mechanisms for reducing the impact of risk factors, which include biological and genetic factors, e.g. personality traits; psychological factors such as intellectual and interpersonal attributes, emotional and behaviour disorders; and social factors, arising from family, school, peer group, neighbourhood and community.
- Intermediate outcomes: lower anti-social behaviour; higher pro-social behaviour; improved cognitive functioning, improved networking and community relationships and involvement (NB volunteering).
- Outcomes: changes in health (including preventing chronic diseases, enhancing mental health, counteracting obesity and promoting health aging), crime and vandalism, education behaviour and achievement, and social capital.

Figure 3.10

DCMS Social Impacts of Participation in Sport : Indicative Multiple Impacts Logic Chain



The weight of evidence is in support of a positive relationship between sport/exercise and social impacts. Most studies identify a range of social impacts from sport/exercise - i.e. on education, pro-social behaviour, and health. Some studies, typically narrative reviews, identify separate impacts but make little attempt to consider the joint effects. Few studies value social impacts in monetary terms.

3.7.2 Joint Outcomes

Schwarzenegger *et al.* (2005^I) review a range of benefits from outdoor recreation before concluding

'Perhaps the most significant conclusion in this report is that these benefits can act in tandem. For example, a recreation program directed at youth obesity can increase self-esteem, reduce the use of alcohol, build family bonds, and promote volunteerism, all at the same time. The combined values that may be gained are almost endless... The aggregate impact of these health and social benefits makes parks and recreation one of the most cost-effective public services available to decision-makers.'

Goldfield *et al.* (2012^B) identifies a collection of positive outcomes from exercise for a randomised control trial with obese adolescents - the benefits being improvements in self-perceived body image, scholastic and social competencies - these being achieved because of changes in aerobic fitness, not from changes in body composition. Hodgson (2011^G) identifies health and social benefits for people suffering severe and enduring mental illness. Fredricks (2006^C) identifies beneficial outcomes from participation in school sport and clubs for academic and psychological adjustment, for drug and alcohol use; and also for educational status and civic engagement one year after leaving high school. Miller *et al.* (2000^F) compared athletes with non-athletes and found that sports participation is negatively associated with cigarette smoking, illicit drug use and suicide risk; and only highly involved athletes were more likely to binge drink. Home Office (2005^I) identified a number of outcomes from a programme for at-risk youth, including better social relations, better education performance and training/awards achievements. Bailey (2005^I) suggests that there is evidence supporting effects of physical education (PE) and sport on physical and mental health, but there is a need for more evidence on cognitive and academic development, crime reduction, truancy and disaffection. Bailey (2006^I, 2009^I) reviews the effects of PE and sport on children's development, including physical, lifestyle, affective, social and cognitive development. He suggests that many of the benefits are not from participation per se, but instead mediated by relationships between students and teachers, parents and coaches.

Sport England (2008a) suggest that the beneficial effects of sports participation on young people's life chances - via effects on resilience, confidence, health, achievement, etc. - translate to improving likely later life outcomes for young participants.

Grieve & Sherry (2012^G) used qualitative interviews at a new sports facility to identify a range of community and social/psychic benefits. Burnett (2001^G) also used largely qualitative methods to identify a range of social benefits from a sport development project, including behavioural and health benefits, social skills, reduced crime, individual and social empowerment afforded through sport, and the reduced social distance between teachers and students. Burnett (2011^G) indicates positive impacts on the status and employability of a programme's volunteer peer leaders. Kay (2009^G) demonstrates indications of a programme's participants' increased knowledge and, via increased self-confidence, their empowerment.

Zabriskie *et al.* (2005^D) found that for disabled people, sport participation positively influences QOL, overall health, quality of family life and quality of social life.

If survival into old age is the ultimate collective benefit, Rizzuto *et al.* (2012^C) found that physical activity is the key leisure activity for increasing survival after the age of 75.

Wilson *et al.* (2010^F) reports on the selection issue - e.g. could negative outcomes not be because of sport but because more at-risk youth select specific sports activities? They report that those who chose basketball and American football were more likely to be at risk and report more negative experiences.

3.7.3 Separate Outcomes

Many narrative reviews list a number of social impacts from sport, typically as separate, independent effects (Cox, 2012^I; VanSickle, 2012^I; Chapin, 2002^I; Edmonton Sport Council, 2010^I, Ruiz, 2004^I; Sabo *et al.* 2004^I; Coalter, 2005^I; Totten, 2007^I; Colin Higgs Consulting, 2008^I; Mulholland, 2008^I, Feinstein *et al.*, 2005^C). Some narrative reviews (e.g. Coalter, 2005^I; Bailey, 2005^I) conclude that whilst the principles behind such impacts are sound, the evidence is weaker; but other reviews summarise considerable evidence, with Mulholland (2008^I) concluding 'broad and compelling evidence of sport's benefits ... as a substantial public asset'. Oughton and Tacon (2007^I) identify that the evidence base on sport has increased significantly in the previous decade.

A common theme is that literature on social impacts is orientated primarily to young people, with an emphasis on the requirements for youth development (Totten, 2007^I), although there are exceptions - one of the benefits identified by Mulholland (2008^I) is healthy aging. Feinstein *et al.* (2005^I) analyse adult outcomes associated with a variety of leisure contexts at the age of 16. Participation in sport at the age of 16 is associated with several positive adult outcomes, including: lower adult smoking; less depression; fewer of the status 'single, separated or divorced'; fewer in temporary or social housing, homeless or victims of crime; higher educational achievement; and fewer on low incomes or living in a workless household. Sport and community centre activity:

'is quite distinctive in largely attracting young people independently of their socio-economic background. Consequently, sport and community centre activities might well be playing a role in ameliorating the long-term effects of poor family background.' Feinstein *et al.* (2005^C: 17)

Bloom *et al.* (2005^F) examined the relative importance of seven prompted benefits, with survey respondents identifying their own perceptions of improved physical fitness and health as the most important benefit, followed in rank order by fun, recreation and relaxation; enhanced sense of achievement; more opportunities for shared family and household activities; improved social, analytical and life skills; opportunities to socialise and make new friends; and preparedness for sport competitions. Whilst all of these are phrased as individual benefits and some are clearly components of wellbeing, improved health brings social benefits in the form of reduced health care costs; improved relationships with family and new friends are elements of social capital; whilst improved social, analytical and life skills are related to increases in accomplishments to the benefit of society.

A different form of social impact is estimated by Humphreys *et al.* (2011^F), who calculated using a contingent valuation method, that Canadians' willingness to pay for success by Team Canada in the 2010 Vancouver Winter Olympic Games was between \$315 million and \$3.268 billion, or between three to eight times the cost of the Games.

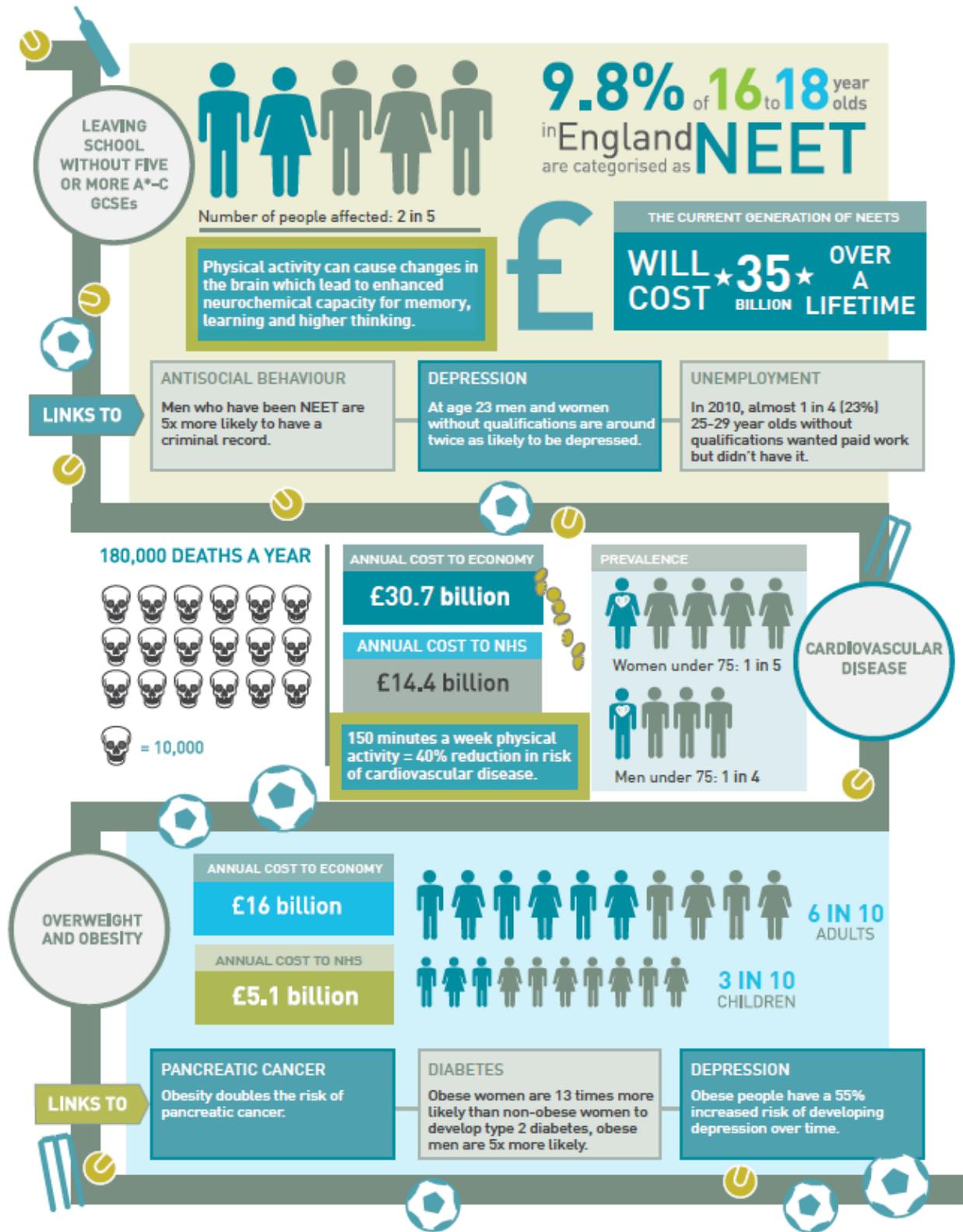
3.7.4 Value

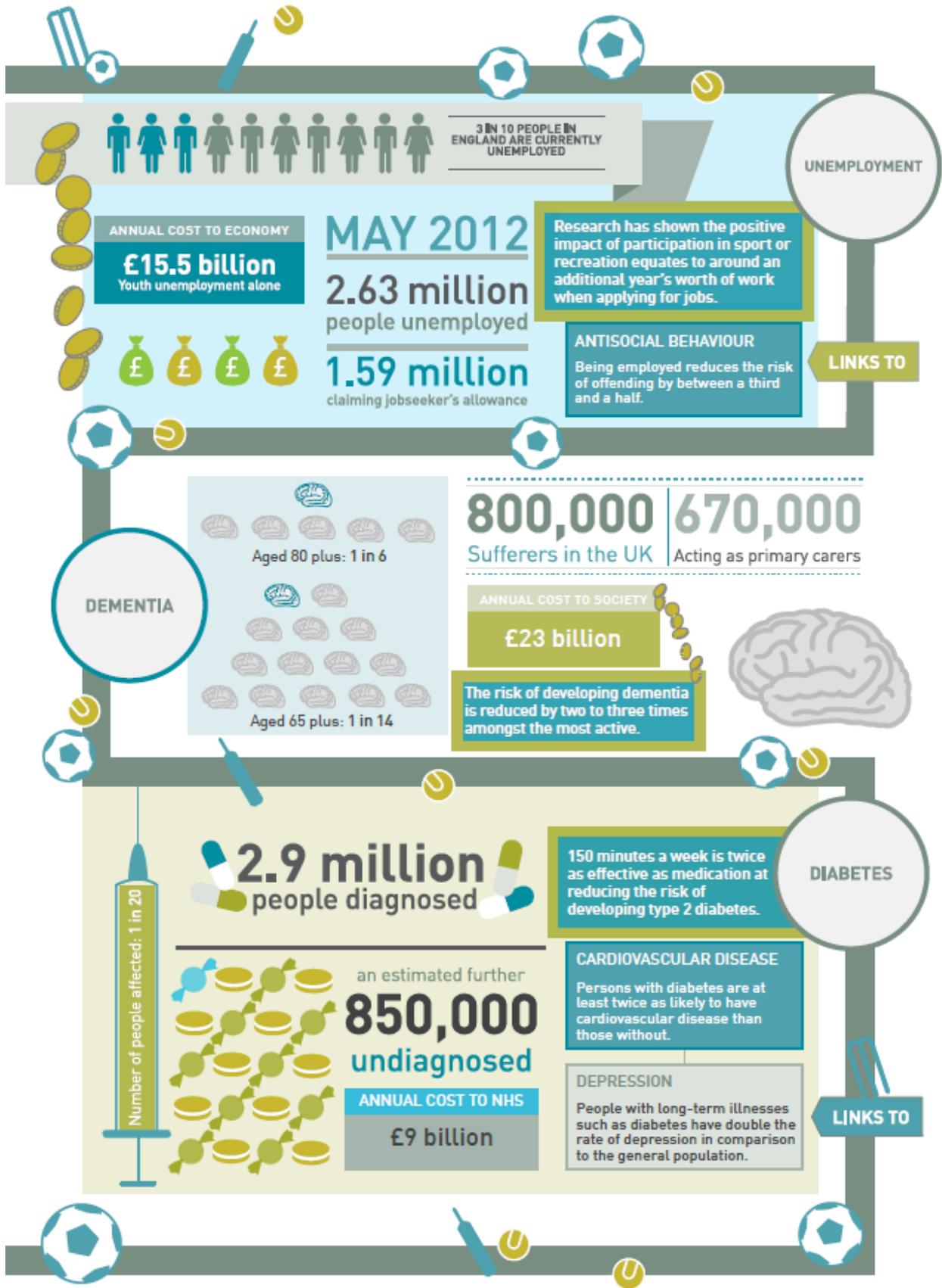
Colin Higgs Consulting (2008^l) identifies the financial value of the return from investing in sport for a number of impact domains, including health, personal growth, community regeneration, community safety and environmental improvement. A similar estimation was not possible for social inclusion. The total return is estimated to be over \$3 for every \$1 invested in sport and possibly as much as \$41 for interventions in high risk groups. Totten (2007^l) makes reference to estimates of the monetary value of the return from investments in sport intervention programmes in relation to health and crime. BUPA (2011^l) refers to as much as £33 billion savings if UK people adopted healthier lifestyles - re. smoking, drinking and inactivity. Cadilhac *et al.* (2011^h) estimated the effects of a 10% feasible reduction in physical inactivity (from the current 70% level) on health, deaths, disability, working days and home based production in Australia. The savings estimate is AUD 162 million. Muller *et al.* (2010^l) estimated the value of sport benefits to Tasmania to be AUD 5.6 billion, with a return of over \$4 value for every \$1 invested by the whole community. This estimate includes health cost savings and volunteering as well as economic benefits. Huhtala (2004^f) estimated the average willingness to pay for outdoor recreation by Finnish adults was €19 per year per person, which aggregates to a total willingness to pay of €75 million per year, which compares favourably with €13 million maintenance costs per year.

Cox (2012^l: 10-11) summarises the potential value of increasing sport and recreation participation, reproduced as Figure 3.11.

Figure 3.11

THE IMPACT OF SPORT AND RECREATION ON SOCIETY





3.8 Differences in the Social Impacts of Sport for Different Population Sub-groups

Most of the evidence reviewed which differentiates social impacts of sport by different population sub-groups relates to different age and gender sub-groups. A few studies differentiate different effects by ethnic and disability sub-groups.

None of the literature reviewed differentiates differing impacts by social groups.

There is no evidence in the literature reviewed of differential wellbeing effects by population sub-groups.

3.8.1 Age

The literature suggests that participation in sport and exercise can generate physical and mental health benefits to both adults and children. There is strong evidence that in older adults sport and exercise improves general physical health. It prevents the onset of several chronic diseases and reduces the risk of musculoskeletal injuries by improving agility and balance and reducing falls. There is also strong evidence that moderate to vigorous activity in older adults can reduce the risk of depression as well as neurodegenerative disorders such as AD and PD. In adolescents, there is some evidence that sport and exercise reduce illness, and also reduce risk behaviours relating to smoking, suicide and sexual activity. In children, some mental health benefits were also identified. However, a number of studies found that there is an increased risk of musculoskeletal injuries in this age group, although these are mostly minor.

Most of the literature relating to the effects of sport on crime and anti-social behaviour is focussed on young people, particularly young males. This is because it is this population sub-group which accounts for a large majority of recorded crime. Another important distinction in the literature is the difference between studies of young people generally, and studies of programmes targeting young people 'at risk'. Most of the evidence relates to the former, however findings from both types of study are similar, and in particular concur that there are significant positive effects of sports participation in reducing crime and anti-social behaviour. There are exceptions to this conclusion, however, particularly the effect of sport in promoting violence and illegal alcohol consumption.

Inevitably, most if not all studies of the effects of sports participation on education processes and outcomes focus on young people, so the general conclusions in section 3.6 above relate to this demographic. However, different studies focus on different age groups in younger people, and some studies identify the adult consequences associated with sports participation when young.

3.8.2 Gender

There is evidence in the literature that sport and exercise impacts positively on women (e.g. reduced risk of breast/oestrogen-related cancers; improved general health) and men (e.g. decreased risk of lower urinary tract symptoms). However, the effects by gender are not as well evidenced as the effects by age groups.

Some studies of sport and education identify different effects on males and females, but without a consistent pattern to the results.

3.8.3 Ethnicity

A few studies relating to sport's effect on crime and anti-social behaviour identify differences between different ethnic groups and, in the USA, between different generations of immigrant

communities. However, there are not enough studies and insufficient consistency in the results by different ethnic groups to be able to generalise about the results.

Similarly, a few studies of sport's impact on social capital focus on ethnic minorities, with the findings being typically that sports participation increases bonding capital, but has weaker effects on bridging capital.

Also, some of the studies of sport and education identify different effects for young people of different ethnicities, particularly white and black.

3.8.4 Disability

Many health studies implicitly focus on disabled people, particularly studies of older people and the effects of sport and exercise on preventing or reducing physical disability issues; and also studies of people suffering from mental health problems. In both cases there is a large degree of consensus that sport and exercise can ameliorate or delay problems.

A few studies of sport and social capital identify that there is a beneficial social inclusion or bonding effect from sports participation for disabled people, including peer relations for the young (e.g. with ADHD) and social integration for disabled adults.

4. Literature Review: Arts

Summary of Social Impacts of the Arts

The evidence points to positive associations between participation in arts and health, social capital, crime and education. The evidence of beneficial effects of the arts extends to clinical and non-clinical populations, and physical and mental health. A number of studies evidence the health benefits of music, both for the general population and for stroke victims.

Most of the research into the relationship between the arts and crime focuses on the effects of arts programmes for offenders. The evidence in such studies testifies to beneficial effects on intermediate outcomes such as communication skills, teamwork and self concepts, which are important antecedents for a reduced likelihood of re-offending. Evidence of actual reductions in offending as a result of arts participation is much less prevalent.

The best evidenced relationship between arts participation and social impacts relates to social capital, including a number of studies which focus on young people. Studies in general testify that cultural participation can contribute to community cohesion, reduce social exclusion, and/or make communities feel safer and stronger. However, perhaps because it is a reasonably well researched area, one or two 'dissenting' studies relate arts participation with social exclusion.

Evidence of the relationship between arts participation and education impacts is reasonable, with positive effects on both intermediate (e.g. self concepts, social capital) and final outcomes (NB education attainment).

Two studies of the effect of the arts on wellbeing are promising for a relatively recent area of research. In one national survey, in Italy, cultural access ranked as the second most important determinant of psychological wellbeing. The second study used surveys at six UK arts for health projects to demonstrate that arts-related participation contributes to personal development and self-perceptions of wellbeing.

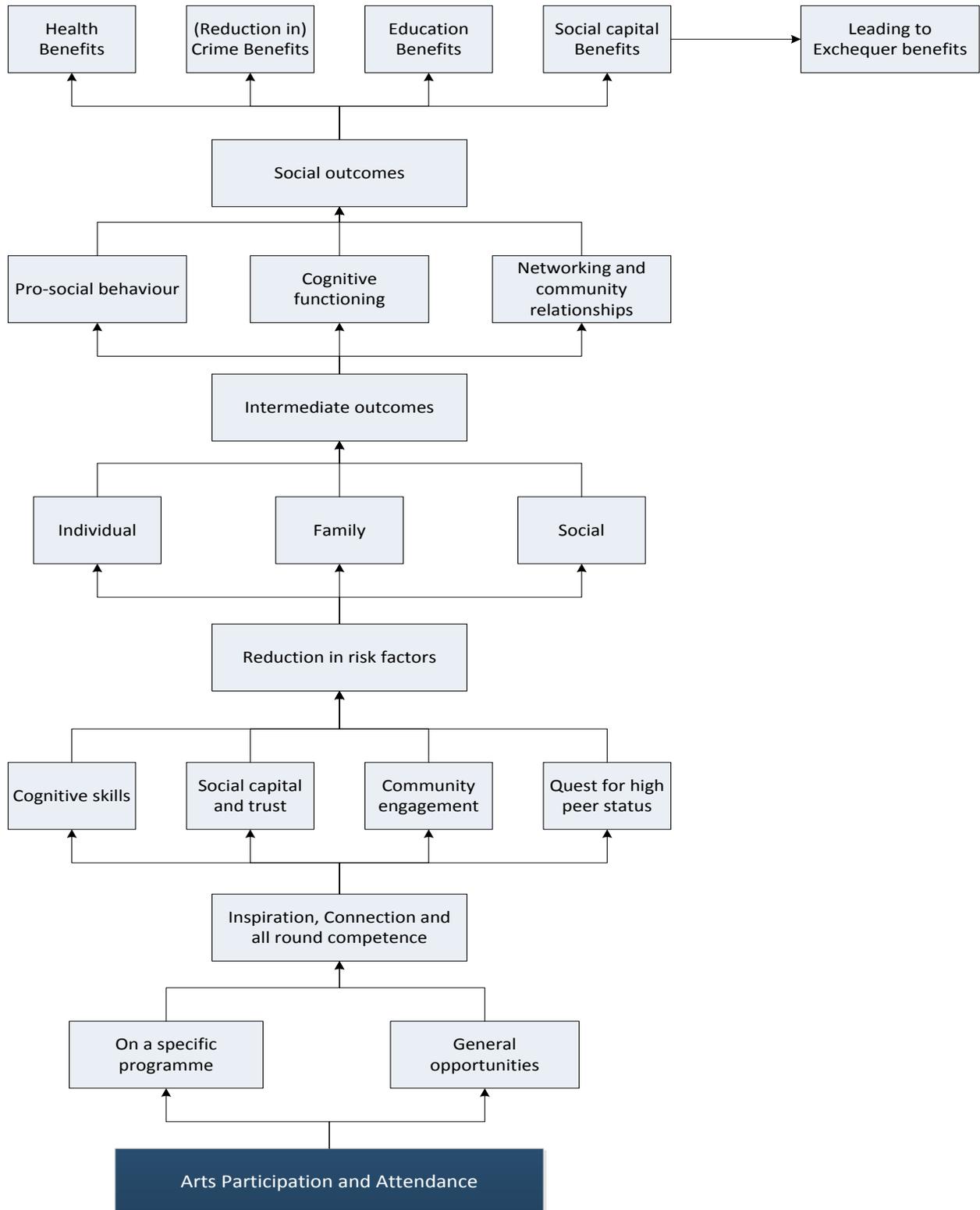
The review of the evidence of the relationship between engagement in arts and each of the outcome areas in this study raises a number of methodological issues. Most importantly, the shortage of robust scientific studies may not be entirely due to the lack of research studies - a contributory factor could be that the search strings used to construct the CASE database include broad terms such as 'impact' and 'benefit' but not specific social impact terms relevant to this project.

More evidence on the strength and direction of relationships and greater understanding of the mechanisms by which the development of impacts takes place would enhance the understanding of social impacts from the arts. Little is known about whether different forms of activity are more beneficial than others, who benefits, who does not and how the intensity, duration and frequency of engagement influences the benefits realised.

Figure 4.1 summarises the logic model for social impacts of the arts, however, evidence for causality and final outcomes is patchy at best. This model follows the same flow as Figure 3.1

for sport, i.e. from participation at the bottom of the diagram, through improved skills and competencies, reduced risks, and developed intermediate outcomes, to social impacts at the top of the diagram.

Fig 4.1 Summary of Social Impacts of the Arts



4.1 Arts and Health

The systematic review identified 12 studies of the relationship between the arts and health, comprising:

- A** 2 systematic reviews
- B** 1 randomised control trial
- C** 1 cohort study
- E** 1 case-control
- F** 2 cross-sectional studies
- G** 3 qualitative studies
- I** 2 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and health are summarised in Table A8.1 in Appendix 8.

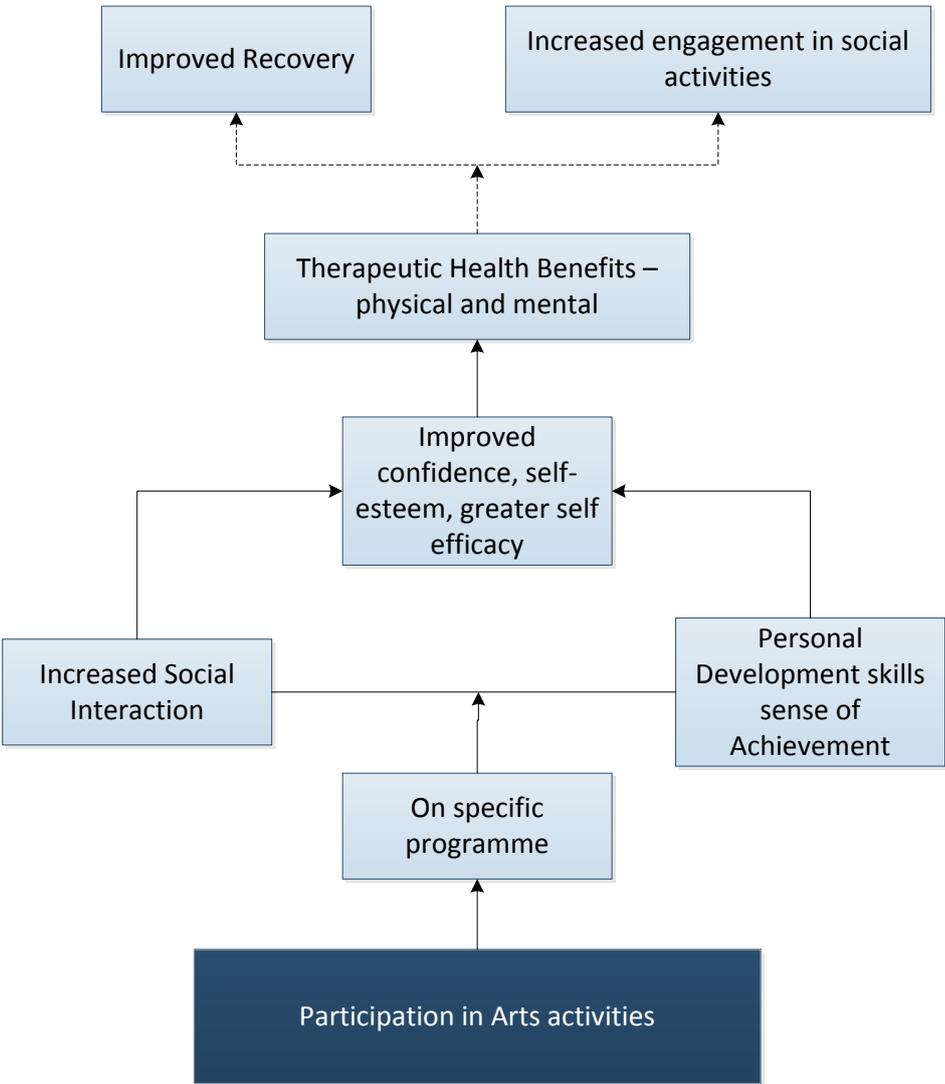
4.1.1 Conceptual Issues: Arts and Health

Conceptually, a distinction needs to be made between people with physical health problems and those with mental health problems. It is apparent that the arts can be beneficial to both groups, not only in helping to improve clinical outcomes, but also as a powerful force in re-integration into society, thereby improving the social impacts via the arts.

Figure 4.2 illustrates the possible pathways via which participation in arts activities may influence health. Although limited, evidence exists which suggests that organised arts programmes may be beneficial for specific groups of patients and those suffering from certain physical and mental health problems or conditions such as stroke, age related cognitive decline and those with mental health needs and significant mental health difficulties. The figure shows that therapeutic health benefits for both physical and mental health are probably gained and mediated through social interactions with others and development of skills, learning and other competencies, both of which bolster confidence, self-esteem and self-efficacy. Improvements in health may aid recovery and enable participants of organised arts activities to increase their engagement in other social activities, although evidence is limited - hence the dotted lines in the figure.

Figure 4.2

Conceptual Model of Relationship between participation in Arts Activities and Health



4.1.2 Evidence on Arts and Health

Cayton (2007^I) and Staricoff (2004^A) provide arguably the most authoritative evidence of the effects of arts on health. Cayton (2007^I) identifies a substantial evidence base, from which it is possible to conclude that arts and health initiatives are delivering real and measurable impacts across a wide range of priority areas for health, and can enable the Department of Health and the NHS to contribute to key wider Government initiatives, including regeneration of deprived areas, creating greater social capital and community cohesion, enabling greater participation and reducing exclusion, and helping people back into employment. Staricoff (2004^A), in a review of medical literature, testifies to the beneficial effects of the arts on nonclinical populations in terms of a reduction in their levels of blood pressure and hormonal benefits, compared with a similar group of people not attending cultural events. Staricoff (2004^A) also identifies an extensive literature on the effects of the arts, mainly music, for in-patients and for those attending out-patient departments. In addition, Staricoff (2004^A) reviews literature showing that art interventions provide support for both mental health patients and professionals, and create new approaches to aid the diagnosis and treatment of mental health disorders.

Beesley *et al.* (2011^G) found that an arts health programme made a substantial impact for stroke victims on wellbeing, QOL and social impacts including community participation and integration. Bradt *et al.* (2010^G) found music therapy was beneficial for stroke victims and enabled them to improve physical health and thereby have a social impact in integration into society. Clift *et al.* (2008^A) report that group singing has a powerful impact on wellbeing, health and social connections, but emphasise a paucity of research in the area. Clift *et al.* (2011^B) in the follow-up, controlled trial found that participants in singing groups report social, emotional and physical health benefits from participating. Cooley (2003^I) found that investment in the arts had a beneficial effect on overall health, with direct impact on social benefits. Parbery-Clarke Anderson *et al.* (2012^F) report that in studies where music is introduced to older participants, age-related delays in subcortical response timings are reduced; this enables a greater involvement of participants in social activities. Secker (2007^F) found improvements across a range of factors, including social inclusion, when participants were involved in arts activities; however, Secker stresses there is currently no 'model' to be used for arts provision for people with mental health needs. Renton *et al.* (2012^F) find an association between arts activities and health but warn that if arts activities are to be recommended for health improvement, social inequalities in access to arts and cultural activities must be addressed in order to prevent further reinforcement of health inequalities. Devlin (2010^G) reports that arts and crafts contribute to health and wellbeing, by creating individuals and communities that are healthy and vibrant.

Various authors suggest models for the improvement effect of arts involvement and participation for people's physical and mental health; e.g. Beesley *et al.* (2011^G). Grossi (2012^F) offers arguably the most authoritative review based on quantitative research, linking participation in arts with better social outcomes and impacts, including health.

4.1.3 Conclusions on Arts and Health

The evidence base that exists is considerable, according to two authoritative literature reviews. The evidence of beneficial effects of the arts on mental health appears to be stronger than the evidence on physical health.

It is probable that the core database used for this review, CASE, and the search terms that were used to construct it, were not conducive to thorough coverage of literature on arts and health.

The current systematic review, for example, did not originally identify two important literature reviews: Cayton (2007^l) and Staricoff (2004^A).

On the evidence assembled for the current review, desirable improvements in making the social impact case for arts and health would include longer term investigation of the causal relationship between arts participation and health, particularly in non-clinical settings; investigation of the dose response relationship for different arts activities - i.e. how much participation yields what kind of benefits; and valuation of the health care cost savings consequent upon any beneficial effects of the arts on health.

4.2 Arts and Wellbeing

The systematic review identified ten studies of the relationship between the arts and wellbeing, comprising:

- C** 1 cohort study
- F** 5 cross-sectional studies
- G** 3 case studies / programme evaluations / qualitative studies
- I** 1 narrative review

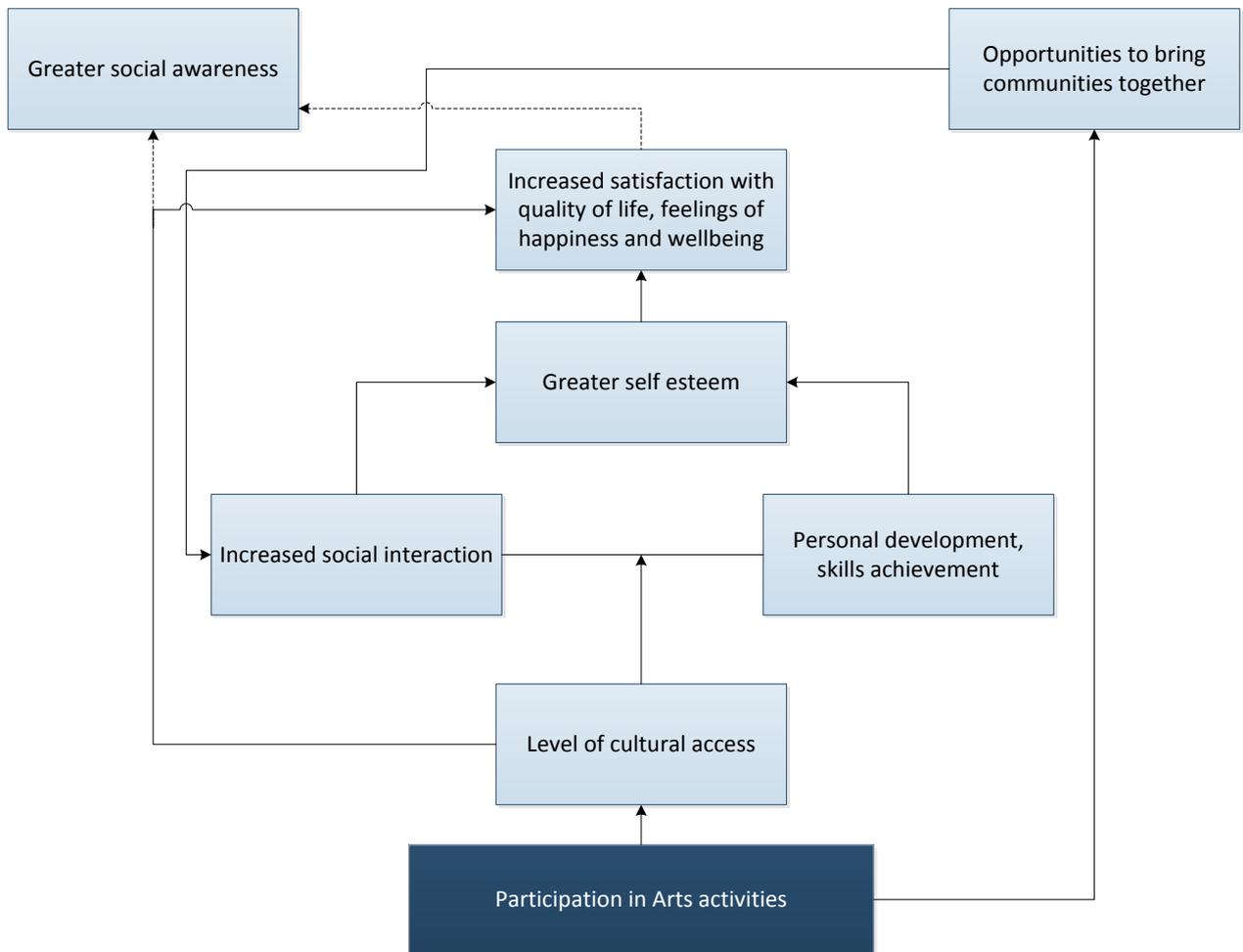
The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and wellbeing are summarised in Table A8.2 in Appendix 8.

4.2.1 Conceptual Issues: Wellbeing and QOL

Galloway *et al.* (2006^I) try to pin down the definition of wellbeing and its relationship with QOL which emerged as an academic discipline in its own right in the 1970s. However, wellbeing is an even more ambiguous, abstract and nebulous term, and an accepted uniform definition does not currently exist. In their study, Kilroy *et al.* (2007^G) adopt a set of subscales in its measure: autonomy, environmental mastery, personal growth, positive relationships, purpose in life and self-acceptance.

Wellbeing, like QOL, is subjective, hence the difficulty in measuring it (Michalos & Kahlke 2008^F). Its impact is usually measured in terms of its perceived value (Galloway *et al.*, 2006^I; Kilroy *et al.* 2007^G; Michalos & Kahlke, 2008^F; Michalos & Kahlke, 2010^F; Regional Arts Australia, 2010^F; Devlin, 2010^G) rather than an absolute, objective value. As with sport, therefore, SWB is the research subject.

Figure 4.3 shows the possible way in which arts activities may influence wellbeing. There is little evidence in this area but cultural access has been found to be a determinant of psychological wellbeing and engagement in arts related activities (in terms of hours of engagement), linked to increased satisfaction with QOL and feelings of happiness. The figure shows that wellbeing may be mediated by access to a range of cultural activities and is probably gained through increased social interactions with others and via personal development and improved self-esteem, which help to enhance feelings of happiness and satisfaction with QOL. Those participating in the arts as part of their leisure time may benefit from increased social awareness (although this is not well evidenced, so the connecting line in the figure is dotted). In terms of the community as a whole, arts related activities may provide opportunities to bring communities together and create more positive environments.

Figure 4.3**Conceptual model of Relationship between participation in Arts Activities and Wellbeing**

4.2.2 Evidence of Effects

The impact of the arts on wellbeing has long been overlooked, as the report by Devlin (2010^G) outlines, and is just beginning to be recognized. As a result, literature is still relatively scarce, leaving a theoretical and empirical vacuum (Galloway *et al.*, 2006^I). And yet, arts-related activities are seen as central to wellbeing by most people, according to a recent Italian study (Grossi 2012^F). Among the various potential factors considered, cultural access ranked as the second most important determinant of psychological wellbeing, immediately after the absence or presence of diseases, and outperforming factors such as job, age, income and other important factors. Kouvonen *et al.* (2012^C) reports a 34 – 53% improvement in overall social awareness and benefit for those who participate in the arts within their leisure time activities.

According to Galloway *et al.*, (2006^I) causality lies at the heart of policy making. Looking into methodologies employed, Galloway *et al.* suggest that some of the difficulties might lie in the research instruments. This is the conclusion reached by Michalos and Kahlke (2006^F; 2008^F). After two successive studies, the authors point to inadequate research instruments as the main reason behind their failed attempt to find correlations between wellbeing and arts-related activities.

Although measuring wellbeing and QOL can prove difficult, a few studies attempt to demonstrate a positive impact from arts participation. Galloway *et al.* (2006^I) identified eight culture-related studies of individual QOL, half of which focussed on the effects of music participation and half of which focussed on older people. However, only one study found evidence of a substantial contribution by arts participation to QOL; the other studies either found no effect or evidence of a very small contribution to QOL. Looking at the individual, Kilroy *et al.* (2007^G) evidenced the increased satisfaction with QOL subsequent to arts participation; and Devlin (2010^G) provides individual testimonies of arts and crafts contributions to both health and wellbeing.

Looking at the community as a whole, Galloway *et al.* (2006^I) is concerned with the lack of appropriate evidence-based theory and concludes that taking the stance that culture plays a key role in QOL is based either on beliefs or on existing research that suggests (but doesn't prove) social impacts. Other studies show that arts-related activities can help bring a community together (Bash, 2006^F), and create a positive environment (Regional Arts Australia, 2010^F). Community wellbeing is, in any case, closely related to the concept of social capital, which is considered in section 4.4 below.

4.2.3 Wellbeing and Health

Wellbeing is often analysed in psychological and physical terms, hence its close relation with health – both mental and physical. However, wellbeing seems to encompass a wider reality than health, comprising elements such as spirituality (Devlin, 2010^G), self-confidence (Kilroy *et al.*, 2007^G), community engagement and social inclusion (Regional Arts Australia, 2010^F; Bash, 2006^F).

4.2.4 The Transformative Power of the Arts

Kilroy *et al.* (2007^G) uses surveys at six projects to identify the transformative power of the arts and demonstrates that engagement with the arts creates a positive atmosphere, empowering

individuals to make healthier choices through becoming more inspired, involved, questioning and willing to take risks. Results suggest that arts-related participation contributes to personal development and perception of wellbeing which, in turn, builds inherent capacity and motivation for change (Kilroy *et al.* 2007⁹).

Devlin (2010⁹) points in the same direction. Quoting the Foresight report on Mental Capital and Wellbeing - which found that to 'keep learning' is one of the cornerstones of mental health and wellbeing - Devlin identifies strong links with participation in the arts and crafts. This report, however, is not unbiased and sets out to widen recognition of the value of arts participation, using testimonies from advocates, and ending with a manifesto for participation in arts and craft.

In their study of UK Government funded SingUp programme, Hampshire and Matthijsse (2010⁹) follow Bourdieu and other critical theorists in arguing that social capital operates in association with economic and cultural capital, and cannot be understood in isolation from the wider constraints of people's lives.

4.2.5 Conclusions on Arts and Wellbeing

Demonstrations of the impact of the arts on wellbeing as a whole remain quite weak and subjective, as it is probably more difficult to prove the impacts of the arts on individual wellbeing than for other activities such as sport and exercise, or for medication that is subjected to clinical trials. There has been recently a wider recognition and consequently more concern for the role that arts participation plays in relation to the overall wellbeing of individuals and communities, as demonstrated for example by the inclusion of measures of culture (alongside sport) participation within the Office for National Statistics (ONS) annual reporting on national wellbeing. However, further work is needed on the definition of wellbeing; and further studies are needed to clarify the causal relationship between arts participation and wellbeing. Ongoing work by DCMS, in particular analysis of the Taking Part Survey data, will help in this regard.

4.3 Arts and Crime

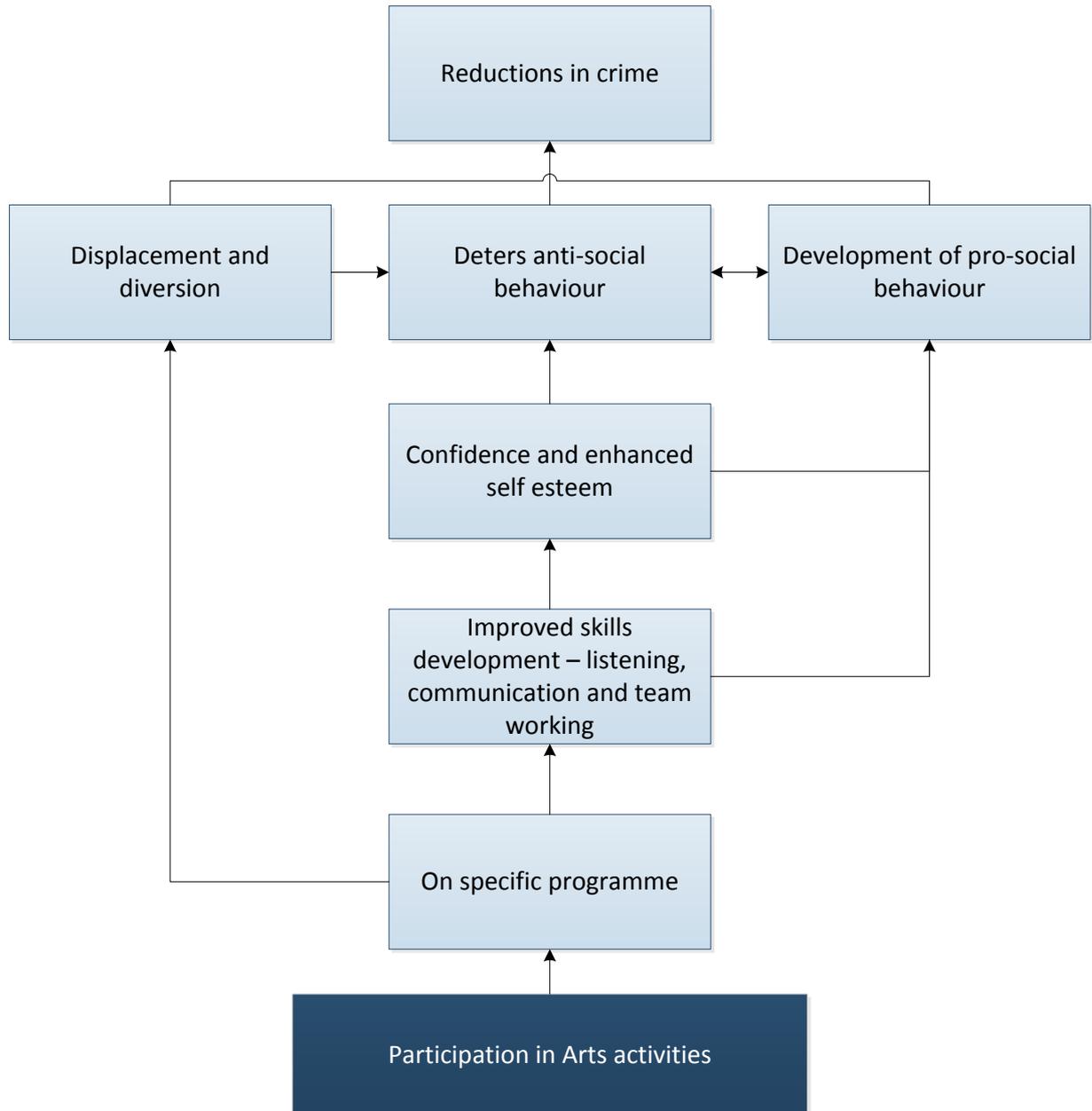
The systematic review identified eight studies of the relationship between the arts and crime/delinquency, comprising:

- C** 1 cohort studies
- D** 1 time-series study
- G** 3 case studies
- I** 3 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and crime are summarised in Table A8.3 in Appendix 8.

4.3.1 Conceptual Issues

Figure 4.4 shows the assumed pathways by which organised arts activities on a specific programme designed for offenders, ex-offenders or youths identified at risk of committing crime may lead to impacts in relation to the outcome area of crime. Based on the evidence which suggests there is a positive relationship between organised arts activities and crime reduction, the figure shows that there is a range of benefits for the specified groups from engaging in arts activities such as enhanced self-esteem, development of cognitive skills including concentration, listening, communication, and team working. Exposure or interaction with the arts acts as a diversion for offenders and helps to promote pro-social behaviour and less involvement with anti-social behaviour. These impacts aid rehabilitation of prisoners and may help to reduce rates of recidivism amongst at risk groups. The figure does not identify any negative effects in the relationship between arts and crime as no evidence of the possible negative effects from the arts was identified in the review.

Figure 4.4**Conceptual Model of Relationship between participation in Arts Activities and Crime**

4.3.2 Evidence of Effects

Eastburn (2003⁹) found that in a sample covering five corrective institutions/prisons in the UK, Gamelan music playing (Indonesian percussion music) helped enhance prisoners' self-esteem and helped them to develop certain basic and key skills including communication, listening, team-working, numeracy, problem-solving, concentration and motor skills. These are fundamental building blocks in the creation of skills that bring about social benefits by helping re-integration into society. Ecotec and Nottingham Trent University (2005⁹) undertook a literature review and research into 756 offenders and 49 crime practitioners. This study found that the arts helped young offenders to develop soft skills including communication skills and teamworking, improve educational achievement and made them less likely to re-offend.

In the studies above, no direct association was established between engagement in the arts and reductions in crime, but rather there were beneficial effects of the arts on skills and self concepts, which may help offenders to reduce re-offending - but this is unproven. Catterall *et al.* (2012¹⁰), however, conducted four longitudinal studies into the effects of the arts on young people with reference to crime, amongst other issues. In particular, at-risk youth groups who had a high exposure or interaction with the arts were significantly less likely to be involved with anti-social behaviour than those with a low exposure to the arts.

Hughes (2006¹) provides an authoritative and comprehensive review of literature on arts and crime. This shows that the arts are associated with positive criminal justice outcomes, through a range of innovative, theory-informed and practical approaches. Hughes suggests that in prevention contexts with young people, evaluation studies provide evidence that arts programmes can reduce offending behaviour and incidents of disruption, help disaffected young people re-engage with education, and sponsor personal and social development. In custodial and community sentencing settings, arts interventions are associated with reductions in re-offending. Arts Alliance (2010¹) report on a variety of arts initiatives taking place in the Criminal Justice System, but they offer no substantive research insight into the outcomes.

Johnson *et al.* (2011⁹) analyse three charity case studies, and investigate the costs and benefits of using the arts to help rehabilitate people who have offended or are at risk of offending. They show how the three charities provide both savings to the public purse and improve the life chances of offenders, thereby giving both social and economic benefits. Van Dijk's case studies (2012⁹) discuss the participation by prisoners in an arts project designed to improve employee skills - however the evidence does not extend to post-prison outcomes. Balfour's collection of 13 international essays (2004¹) about Theatre in Prison explores the diversity of drama works in prisons but again does not extend to post-prison outcomes.

There are no dissenters in the studies reviewed regarding the beneficial impact of arts programmes on offenders. However, many of the studies cited above do not extend to evidence of outcomes in relation to social impacts - they are more concerned with programmes' processes and individual outcomes for programmes' participants. Models for the deterrence effect of arts involvement on young people's anti-social behaviour are few.

4.3.3 Conclusions on Arts and Crime

The evidence base points to arts activities promoting pro-social and anti-criminal behaviours and overall the literature suggests that a likely positive relationship exists between arts and crime for prisoners/offenders and groups who are at risk of committing crime. However, this evidence largely concerns intermediate outputs - the behavioural roots to crime - rather than final outputs such as reduced crime and anti-social behaviour.

Much of the evidence relates to the impacts of arts initiatives for offenders, ex-offenders and young people at risk of offending undertaken in institutional settings such as prisons and corrective establishments. The literature highlights benefits for these groups such as enhanced self-esteem, development of cognitive skills including concentration, listening, communication, and team working, and a greater ability to interact in society following release from prison. However, the evidence does not extend to recidivism rates.

In terms of research gaps, there is a need for more research into the effects of the arts on the general population and other groups such as young people who are at risk of committing crime. There is also a need for evidence of the effects of arts on crime at a community level, rather than on an individual level.

4.4 The Arts and Social Capital

The systematic review identified 58 studies of the relationship between arts and social capital, comprising:

- A 1 systematic review
- C 2 cohort studies
- D 2 time-series studies
- E 2 case-control
- F 20 cross-sectional studies
- G 23 qualitative studies / case studies / programme evaluations
- I 8 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and social capital are summarised in Table A8.4 in Appendix 8.

4.4.1 Conceptual Framework and Issues

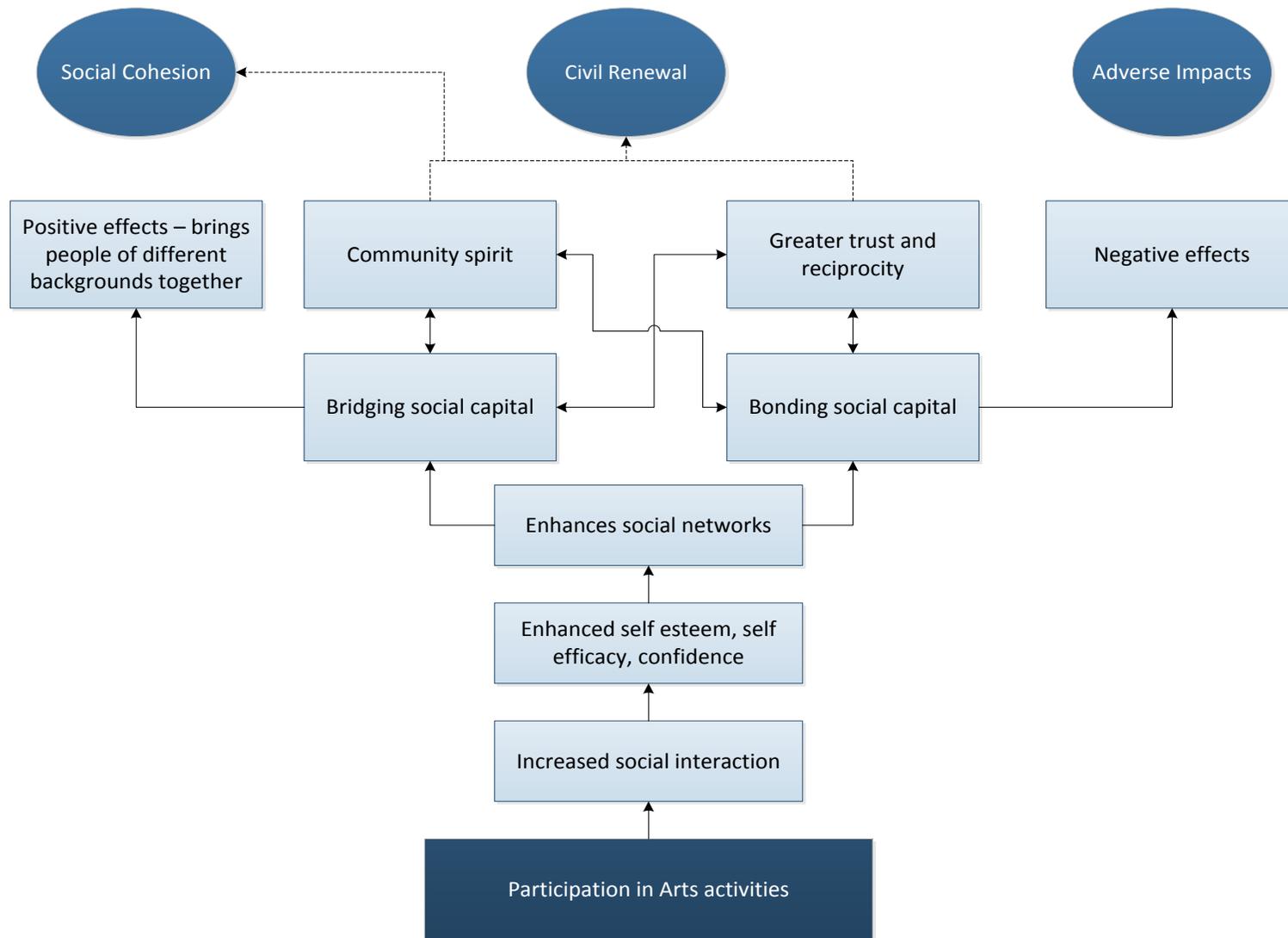
The relationship between arts and social capital is much more documented than for other outcome areas and overall the volume of evidence points to a positive relationship. Given the evidence base, it is assumed that the relationship between the arts and social capital is similar to that of sports participation and social capital. Figure 4.5 shows that participation in arts related activities leads to greater social interaction, enhanced self-esteem and the development of social relationships and networks, which nurture social capital.

Evidence also points to the possibility that arts activities bring people from different backgrounds together in the form of bridging social capital and that organised arts activities may also help promote the inclusion of disadvantaged groups such as asylum seekers and refugees, disabled people and young people at risk. The figure shows that enhanced networks then provide the foundation for the further expression and creation of social capital through greater trust and reciprocity for example, although there is less evidence to suggest a link between arts participation and arts volunteering than is the case for sports.

There is a dearth of evidence indicating that participation in arts activities leads to fundamental change in terms of social cohesion and civic renewal, so this is represented with a dashed line in the figure. Figure 4.5 also highlights the possibility of the negative effects of social capital, especially given the socioeconomic bias in much of arts engagement.

Figure 4.5

Conceptual Model for Relationship between participation in Arts Activities and Social Capital



4.4.2 Evidence of Effects

The weight of evidence supports a positive effect of the arts on social capital. However, Kinder & Harland (2004^I) stated that at that time there was no high profile or large scale research study that provided substantial evidence on social inclusion. Carlsen (2007^G) pointed out that important issues such as engagement with the arts, community, cultural, social, and stakeholder benefits and disbenefits produced had yet to be researched in any systematic way. Nevertheless, many of the studies summarised below post-date these criticisms.

Stern and Seifert (2008^D) identified a correlation between cultural engagement and community wellbeing. National Endowment for the Arts (NEA) (2009^F) used national survey evidence to demonstrate that Americans who attend arts performances, visit art museums or galleries, or read literature are particularly active members of their communities. National Statistics (2009^F) used Scottish survey evidence to show that cultural participation can contribute to community cohesion, pride and confidence, reduce social exclusion, enhance a 'sense of place', and make communities feel safer and stronger. Bash (2006^F) demonstrated the critical factors in the most arts-active communities, including leadership connected into community networks; recognition by non-arts leaders that the arts are essential to community wellbeing; and arts activities that are intentionally inclusive. Grodach (2010^G) used interviews to show that arts spaces' programming and other activities contribute to community development.

Goodlad, Hamilton and Taylor (2002^G) reported on an effective funding scheme that encouraged Social Inclusion Partnerships (SIP) to use the arts to achieve social inclusion. Participants and SIP employees held very positive views of the outcomes of the arts projects. A Japanese study (Nakagawa 2010^I) showed that socially inclusive arts policies, over a ten year period, helped to change perceptions, create greater awareness of social connectedness, bridge building, increase volunteering and improve social capital.

Moody and Phinney (2012^G) used qualitative methods to demonstrate that an arts programme for older people enhanced both their sense of community and their connections with the external community.

A number of studies focus on young people. Bragg, Manchester & Faulkner (2009^F) showed the key features of a community cultural development initiative to build social capital among children. Programme features included facilitating friendship connections between children and designing activities that incorporate the sharing of materials, equipment and tools to facilitate reciprocity. Buys & Miller (2009^G) showed that cultural development initiatives for children had beneficial effects in five social capital domains measured: self-concept, reciprocity, extended networks, feelings of obligation, and feelings of trust and safety. Carpenter (2004^G) explored six Creative Neighbourhoods projects for young people and concluded that the projects had contributed to the development of social capital in deprived neighbourhoods, by empowering young people and building new social structures.

In Canada, youth engagement with the arts helped to remove barriers, promote social relationship skills and enhance emotional literacy (Fuller 2009^G). Griffin *et al.* (2009^E) identified that a theatre education programme improved student engagement and English proficiency. Yonas (2009^G) in an observation study, found that young participants identified a range of issues related to community factors, community safety, and violence. The arts could be a factor in creating safe spaces where social skills and social interaction develop.

Carpenter's (2004^G) study of Creative Neighbourhoods projects included the combating of

racism and reduced risks of offending, according to qualitative feedback from case studies. The arts have been shown to have a positive effect in promoting social inclusion in asylum seekers and refugees (Field, 2001^G). Benediktsson (2012^C), in a quantitative study, identified that students with an extensive background in the arts tended to make more friends across racial lines.

Secker (2007^F), in a cross-sectional study of 230 arts and mental health projects, found that significant improvements were found in empowerment, mental health and social inclusion, as well as a significant decrease in the proportion of participants identified as frequent or regular service users. To the extent that improvements could be attributed to arts participation, the greater improvement in empowerment and mental health amongst people with poorer mental health at baseline indicates that arts projects can benefit people with a range of mental health needs, including those with significant mental health difficulties.

A study on disabled and at-risk children who experienced the Expressive Arts Outreach programme in the USA showed increased inclusion and improved skills and social abilities (Hutinger, 1998^G). Triangulated data from children, teachers and families showed an improvement in children's communication skills, social abilities, problem solving skills, expressive abilities, and motor abilities. Family surveys indicated satisfaction with the project and increased participation in expressive art activities with their children at home (Hutinger, 1998^G).

Finally, two studies which might be seen to question the notion that the arts can foster social capital. Le Roux *et al.* (2007^F) used quantitative analysis to demonstrate that social class is strongly related to cultural differentiation, as represented by participation in different cultural activities. Lees and Melhuish (2013^I) challenged the assumption that arts-led regeneration is a tool to combat social exclusion in inner cities.

4.4.3 Volunteering

Volunteering and caring are both developed by arts engagement. Keaney (2006^I), in a thinkpiece, states that the generation of social capital and building communities is no easy task – indeed patterns of community relations and associational life often have their roots in the far distant past. Nevertheless, government can make a difference by helping to do three things: promote volunteering, build capacity and encourage and support civic and political participation. The Interarts Foundation (2010^F) reports that family and social environment are fundamental elements in encouraging cultural participation, including volunteering, which is an important element. Digitalisation can be used as a driver for cultural participation. The NEA (2009^F), in a research note, finds that Americans who attend arts performances, visit art museums or galleries, or read literature are particularly active members of their communities. Although this note draws conclusions similar to those of previous NEA reports, it examines a wider range of civic and social activities. In analysing volunteer rates among arts participants it finds volunteering is at a greater level in arts engagers.

4.4.4 Conclusions on the Arts and Social Capital

Overall the weight of evidence points to a positive relationship between arts and social capital. The evidence base of this relationship is much greater than for other outcome areas in the arts. The evidence suggests that the arts may contribute to social capital through opportunities for social interaction and the development of social relationships, networks, communication

skills, self-esteem and trust and that this may be the case particularly for young people and older adults.

As well as enhancing bonding social capital, there is some evidence to suggest that arts may help bring people from different backgrounds together and help to promote the social inclusion of groups such as asylum seekers and refugees, disabled people and young people at risk.

However, there is a lack of substantial evidence on arts and social inclusion. Studies have highlighted that arts participation may vary systematically by class, employment and income. There is no substantive evidence of arts improving linking social capital. One statistical study (not specific to arts resources) of deprived locations in Glasgow found that resources are sometimes closer to poorer neighbourhoods and sometimes closer to more affluent neighbourhoods (McIntyre *et al.*, 2008^F) - the former are not consistently disadvantaged in access to such resources.

When compared to the evidence base on sports and social capital, the review of arts and social capital uncovered much less evidence on the link between arts participation and arts volunteering. There is some American evidence that those who frequently participate in arts are more likely to be active in a range of civic, religious and political activities across all income levels.

It is widely recognised by various academics and commentators that the development of social capital can have negative outcomes but there is little discussion in the arts and social capital literature of any negative effects. Detailed evidence of how and when arts can be beneficial, who is currently benefiting and how any negative effects can be avoided is needed. There may also be wider forces here which need to be examined, notably changes in arts participation by socio-economic group. In addition there is no evidence on the differential impacts of different arts activities - are some arts more beneficial in terms of social capital than others and if so how and why?

4.5 The Arts and Education

The systematic review identified 18 studies of the relationship between the arts and education impacts, comprising:

- A** 1 systematic review
- C** 2 cohort studies
- D** 1 time-series study
- E** 1 case-control
- F** 2 cross-sectional studies
- G** 7 case studies / programme evaluations
- I** 4 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and education are summarised in Table A8.5 in Appendix 8.

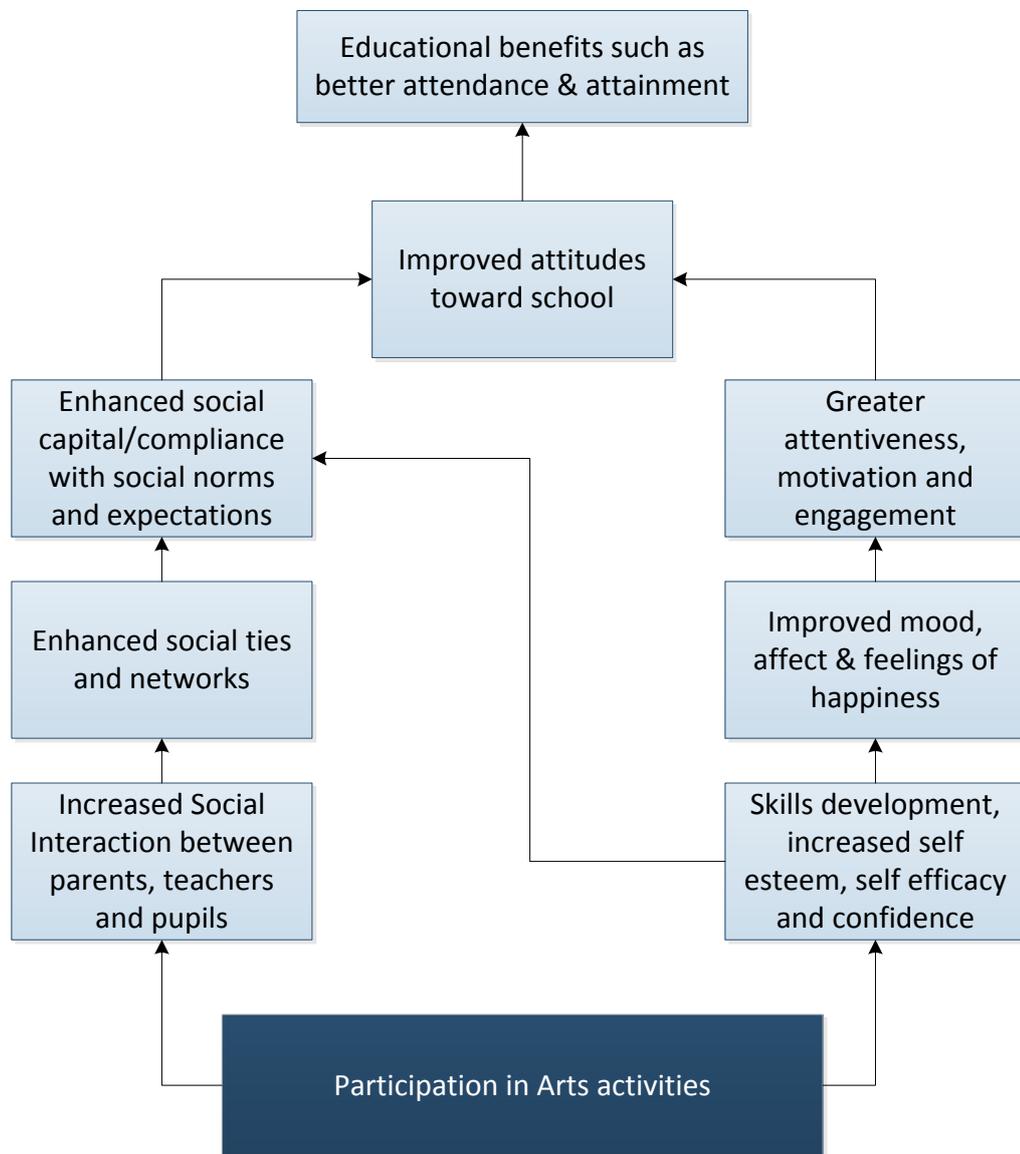
4.5.1 Conceptual Framework and Issues

Figure 4.6 illustrates the assumed pathways by which the available evidence suggests arts participation may lead to educational impacts; via a social capital route and via a psychological route of improved self-esteem and self-efficacy. There is little evidence from the literature reviewed of a cognitive route via improved concentration and thinking skills. Figure 4.6 shows that school based arts projects increase the interaction between students, teachers and parents which enhance social ties and networks and build social capital amongst children. Activities result in skills development and personal achievement. This leads to greater confidence, enhanced self-esteem and self-efficacy which leads to improved mood and a sense of happiness. These factors help to improve engagement and motivation and may lead to improved attitudes towards school. There is less evidence to support the link to intermediate outcomes such as improved educational behaviour. A few studies in the review found a positive association between engagement in arts activities and academic attainment.

As with the evidence on participation in sports and education, it is likely that many of the claimed impacts of participating in arts in schools are mediated by a range of contextual and pedagogic factors. High standard activities presented in interesting and innovative ways and which receive widespread positive support from pupils, parents, teachers, head teachers and local authorities are likely to be most beneficial.

Figure 4.6

Conceptual Model of Relationship between participation in Arts Activities and Education



The weight of a limited evidence base is in support of a positive relationship between the arts and intermediate outcomes such as improvements in confidence and relationships and final outcomes such as educational attainment.

4.5.2 Intermediate Outcomes

Buyts & Miller (2009^G) suggest that school-based community cultural development projects offer one way to build social capital in children in five educational/social capital domains measured: self-concept, reciprocity, extended networks, feelings of obligation, feelings of trust and safety. Newman *et al.* (2010^A) conclude that participation in arts activities is associated with improvements in young people's cognitive abilities and transferable skills (including self-concepts and social skills). Creative Partnerships (Bragg and Manchester, 2007^G) created programmes that promoted the arts in schools and their evaluation identified improved relationships between staff and students, enhanced motivation to learn and boost the reputation of the school in the local community. Hutingger's (2009^G) findings for the Expressive Arts Outreach project are as relevant to education outcomes as social capital, particularly the improvements in children's communication skills, social abilities and problem solving skills. IPSOS MORI (2009^F) reports that parents associate a number of impacts with their children's participation in cultural activities, and consider it important that their children have access to cultural activities on a regular basis.

4.5.3 Educational Attainment

A positive association between engagement with the arts and academic attainment was identified by Bamford & Glinkowski (2010^G). The overall results of the impact evaluation indicate that the Wider Opportunities Programme in Music at Key Stage Two is generally of a high international standard. Children appeared genuinely happy in most of the lessons and effective lessons were characterised by innovative pedagogy and interesting approaches. The President's Committee on the Arts and Humanities (2011^D) review a number of studies which demonstrate that high involvement in the arts by students is associated with higher grades and test scores in maths and reading. One of the studies reviewed by the President's Committee is Catterall *et al.* (2012^C) which demonstrated with substantial longitudinal data that early involvement in the arts is positively related with subsequent academic success; and low income, arts-engaged students perform better than their non-arts-engaged peers. Newman *et al.* (2010^A) conclude that arts participation is associated with higher pre-school and primary school age early literacy skills; and with higher academic attainment for secondary school age students. Vaughan *et al.* (2011^C) in a cohort study demonstrated that students participating in an arts programme had significantly higher grades in academic subjects such as English, Maths and Science. Griffin *et al.* (2009^E) identified that a theatre education programme had a positive effect on students' academic achievements through improving their English proficiency. Hunter's (2005^G) impact evaluation findings demonstrate that arts participation can positively impact students' development, particularly if professional support is provided for teachers and collaborative partnerships are established between students, teachers, artists, families and communities.

4.5.4 Conclusions on Arts and Education

The evidence points to a positive relationship between arts and educational impacts. There is little longitudinal research in this area and it is difficult to be precise about causal links between arts participation and school performance and attainment.

It is likely that educational benefits achieved through arts participation are via the enhancement of self-esteem, self-efficacy, locus of control and/or the development of social capital and/or

improved attitudes towards education and educational values. A number of studies have found that community and school based cultural development projects help children and young people build networks, develop skills and self-esteem and improve relations between staff, students and parents but there appears to be less evidence of links to outcomes such as improved educational behaviour (e.g. attendance) and academic attainment.

Many of the claimed benefits of participating in arts in schools are likely to be dependent on a range of contextual and pedagogic variables. When activities are presented in meaningful and relevant ways to students and young people, then they are likely to have greater appeal and have positive effects on educational behaviour and attitudes.

Although the evidence points to a positive association between participating in arts and educational impacts, less is known about the mechanisms by which such development takes place. There is little discussion in the literature of the possible negative effects of arts or the relative impacts of different activities and who benefits most.

4.6 Arts and Multiple Impacts

The systematic review identified 59 studies of the relationship between the arts and multiple impacts, demonstrating the connected nature of the social impacts under investigation. These studies comprise:

- C** 6 cohort studies
- D** 1 time-series study
- F** 17 cross-sectional studies
- G** 15 case studies / programme evaluations / qualitative studies
- H** 1 economic evaluation
- I** 18 narrative reviews
- J** 1 expert opinion

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of arts and multiple impacts are summarised in Table A8.6 in Appendix 8.

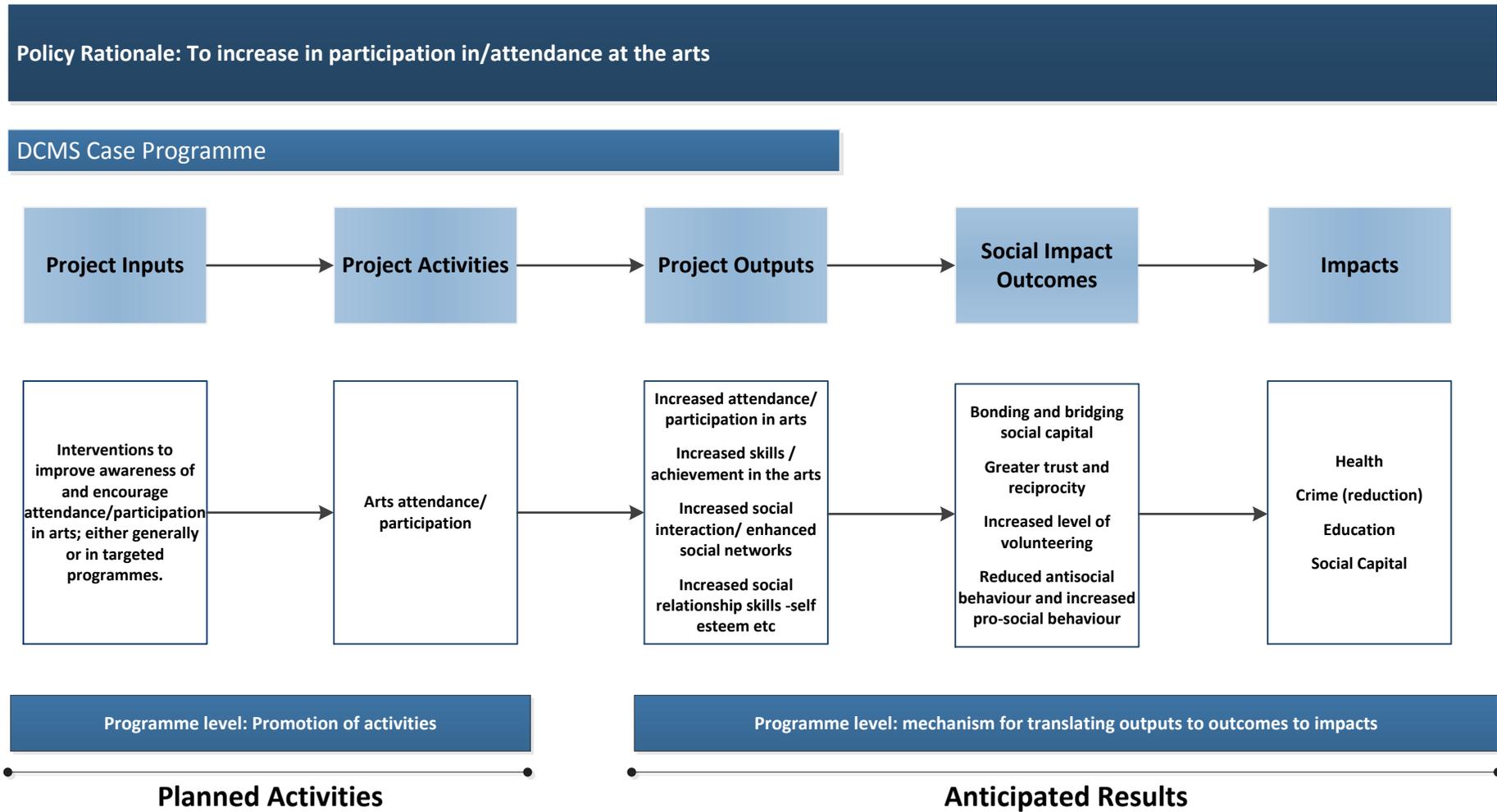
4.6.1 Conceptual Issues

Guetzkow (2002¹) suggests 'As private and public agencies seek innovative ways to employ the arts to improve and strengthen communities, they have become increasingly interested in assessing the impact of their investments. In this context, arts advocates and researchers have made a variety of ambitious claims about how the arts impact communities. These claims, however, are made problematic by the many complications involved in studying the arts. Just consider the possible definitions of the phrase, "the arts impact communities." When speaking of "the arts", do we refer to individual participation (as audience member or direct involvement?), to the presence of arts organizations (non-profit and for-profit?) or to art/cultural districts, festivals or community arts? When speaking of "impact", do we refer to economic, cultural or social impact; do we refer exclusively to direct community-level effects or do we also include individual- and organizational-level ones? By "communities", do we mean regions, cities, neighbourhoods, schools or ethnic groups?'

In the light of the evidence available from the literature review, Figure 4.7 summarises the overall logic chain from inputs to impacts.

Figure 4.7

DCMS Social Impacts of Attendance in Arts: Indicative Multiple Impacts Logic Chain



4.6.2 The Arts as a Catalyst for Social Change

Following the footsteps of Matarasso's work on the social impact of participation in the arts (Matarasso, 1997^G), research on the social impacts of the arts seems to be developing.

The arts sector has embraced economic and more recently, social rationales for its activity, alongside aesthetic and cultural rationales, in order to argue for increased recognition of the contribution of arts to wider social and economic wellbeing, and for increased public investment in the face of competing public policy priorities (Reeves, 2002^I). Policymakers have shown great interest in considering social as well as economic impacts when developing policies and programs for arts and cultural activities, commissioning a number of reports in order to demonstrate the positive economic and social impacts of arts interventions (ACE, 2004^I; AEGIS, 2005^I; Stern & Steifert, 2008^I; Martin & Bartlett, 2003^G).

4.6.3 Multiple Impacts: Issues with Evidence

In the UK, the Arts Council for England reported on research projects relevant to *The Impact of the Arts* (ACE, 2004^I). In other countries other reports compile statistical evidence of the impact of the arts on a range of criteria, e.g. in Scotland (National Statistics, 2009^F), and in Australia (Regional Arts Australia, 2010^F).

The argument is quite simple in principle, as identified in Figure 4.7: by attending arts activities, participants trigger positive impacts, both on individuals and communities. Many studies concentrate on the beginning of this process: the nature and diversity of arts participation is the subject of numerous studies (Walker, Fleming & Sherwood, 2003^F; Mori, 2005^F; BMRB, 2006^F; Delaney & Keaney, 2006^F; Bunting, 2007^G; Hill Strategies Research In., 2010^F).

Demonstrating causality between art attendance and any social impact, however, is a more difficult research task. Studying grassroots arts activities in communities, for example, Ramsden *et al.* (2011^I) identify a range of different potential impacts relating to amateur arts groups, but also outline the lack of empirical evidence quantifying the exact nature of these impacts.

Indeed, as highlighted by the Australian Expert Group in Industry Studies, research results provide evidence of diversity and complexity rather than of clear lines of causality or even associations between arts and cultural programs or activities and their impacts in the multiple arenas of the social domain (AEGIS, 2005^I). Such difficulties prompt Galloway (2009^I) to question the effectiveness of theory-based evaluation approaches currently used in the UK research agenda. Most researchers underline the need for more research to be done in the field (Galloway, 2006^I; Hill Strategies Research, 2008^I; 2010^F; Ramsden *et al.*, 2011^I; Reeves, 2002^I).

4.6.4 Multiple Impacts: Evidence

Analysing arts as a catalyst for change, several reports display correlations between arts activity and subsequent levels of attitudinal change, civic engagement, academic performance and professional development (Catterall, 2012^C; Wright *et al.* 2006a^C; Wright *et al.* 2006b^D; Vaughan & Harris, 2011^D; Schellenberg, 2006^F; ACE, 2006^G; Eastburn, 2003^G; Kilroy *et al.*, 2007^G; Tarr, 2008^I). Arts Council England (2004^I) reviews evidence of the impact of the arts on several social benefits, including education, health, crime, and regeneration. Galloway (2008^I) does a similar job for evidence from 2004 to 2007 and concludes that the evidence base has increased considerably in this period, albeit from government studies.

In their reports, Catterall (2012^C) and Vaughan & Harris (2011^C) underline the benefits of arts education, showing higher academic performance and lower drop-out rates for students who

participate in the arts both in school and after school. Research done by Tarr (2008^l) indicates an effect of arts based-pedagogies on children's environmental awareness.

Arts Council England (2006^g) and Catterall (2012^c) outline the positive results of arts programmes among young people at risk, identifying improved levels of confidence and verbal and written communication. Two research projects conducted by Wright (Wright *et al.* 2006a^c; 2006b^d) point out the significant gains of structured arts programmes for children from low-income communities, including increased confidence, improved pro-social skills and improved conflict resolution skills.

Eastburn (2003^g) analyses the positive effects of a pilot art project on prisoners. He demonstrates that Gamelan playing (Indonesian percussion music) can improve self-esteem and basic key skills, and can help develop professional skills, boosting their employability. National Governor's Association (2002^l) reaches a similar conclusion about general, at-risk, and incarcerated people in the USA, outlining the impact of arts education on workforce preparation by building skills, increasing academic success, and lowering the incidence of crime among general and at-risk populations.

4.6.5 Social Inclusion

Many studies of the impact of arts-related activities, whilst identifying various types of benefits, focus on social inclusion effects. In a consultation conducted with university scholars, cultural practitioners, policymakers and researchers from various national arts councils, Stanley (2006^g) suggests that cultural participation results in an improved capacity to take part in the collective life of society, what he calls 'cultural citizenship'. Studies also show that in boosting confidence and developing social skills, the arts improve the ability to engage with the community and society at large (Aylward, 2005^g; Wright *et al.*, 2006b^d; Kilroy *et al.*, 2007^g; Stevenson, 2010^g Catterall, 2012^l).

Exploratory statistical studies conducted by Hill Strategies Research Inc. (2008^l (a, b); 2010^f) evidence a correlation between arts attendance and greater civic engagement in Canada. Statistics indicate that Canadians who participate in cultural activities are more likely to be socially active than Canadians who do not take part in cultural activities. Using data from a previous Canadian General Social Survey, Jeannotte (2003^l) focuses on cultural policies, and presents statistical evidence of the contribution to social cohesion made by investments in cultural capital. Her study echoes Runnal's cross-sectional study of municipal cultural practitioners in British Columbia (2007^f), which shows that cultural planning is central to community viability. An American study goes as far as saying that an interest in arts predicts social responsibility (LeRoux, 2012^f).

Other studies focus on how the arts can help break down barriers between different social groups (Aylward, 2005^g) and engage with some of society's most excluded groups such as offenders, refugees or elderly people (Arts Council England, 2006b^g), presenting new ways of weaving the social fabric beyond the cultural divides which remain among audiences (Danielsen, 2008^l).

Lastly, some studies broach the subject of local engagement. Festivals in particular can have interesting social results which are frequently overlooked in impact studies, as the attention of stakeholders is very often focussed on economic impacts (Carlsen, 2007^l). Cultural festivals can help develop a sense of attachment and enhance local image and identity (Maughan and Bianchini, 2004^g).

4.6.6 Regeneration

Evans (2005^l) shows that the rationale for cultural inputs to area and neighbourhood regeneration

has been extended to include QOL as well economic outcomes. The evidence of how far flagship and major cultural projects contribute to a range of regeneration objectives is, however, limited. Measuring the social, economic and environmental impacts attributed to the cultural element in area regeneration is problematic and the 'evidence' is seldom robust. One of the better examples is Garcia *et al.* (2010^G) who reported on Impacts 08, which delivered four main outcomes: the longitudinal impact analysis of the Liverpool European City of Culture (ECoC); an enhanced evidence base for the multiple impacts of culture upon regeneration and city renaissance, which has assisted local and regional cultural planning as well as informing the UK national debate; the provision of intelligence to guide decision-making for the Liverpool ECoC delivery team; and the legacy of a replicable research framework, which can be used to explore the impacts of culture-led regeneration programmes beyond Liverpool and 2008.

EKOS (2008^H) assert that culture is an important component of the continued economic and social renaissance of the North West region. The cultural sector contributed £15bn to the region's economy. They consider that a critical mass and excellence in culture are essential prerequisites for a competitive region. Regional Arts Australia (2010^F), in a large cross-section survey, identified that a majority of interviewees believed the arts play a vital role in cultural tourism and in economic development and job creation.

4.7 Differences in the Social Impacts of the Arts for Different Population Sub-groups

Four types of population sub-groups feature in the arts and social impacts literature, the most common being young people, who are the focus of all the arts and education studies and several of the social capital and crime studies. Three studies focus on older people (one each for health, wellbeing and social capital) whilst one study examines education and social capital effects for disabled young people.

The studies featuring young people tend to concentrate on psychological and behavioural effects, rather than on the final outcomes such as education attainment, volunteering, or reductions in crime. They therefore demonstrate at best potential, rather than actual, social benefits.

The studies featuring different population sub-groups are dominated by programme evaluations, with a couple of narrative reviews, one case-control study (for young people), and one time series study, for young offenders. In the main therefore, the limited research on arts and social impacts for population sub-groups is not high in the evidence hierarchy.

5. Literature Review: Heritage

Summary of Social Impacts of Heritage

Two areas of social impact are identified in the review in relation to heritage - social capital and multiple impacts. One study demonstrates that a historic built environment has a significant and positive relationship with social capital for adults. Another study uses a cross section survey to show that participation in Heritage Lottery Fund projects helps to maintain and deepen the skills, knowledge and social networks of volunteers and to increase their sense of belonging to their local communities.

However, most of the studies for this sector lack hard evidence on the development of social impacts through heritage. Much of the limited literature is more an assessment of the potential of heritage to contribute to individual, social or economic impacts, rather than empirical assessments of the scale and nature of such impact creation. The little evidence of social impact creation contained in the literature is largely of a qualitative nature, which makes generalisation problematic.

The systematic literature review discloses no publications for review on the effects of heritage on health, wellbeing, crime, or education as social impacts. However, as is the case with the arts above, the lack of literature may not be entirely due to the lack of research studies. As one expert commentator on this project's steering group suggested, there might be a shortage of literature but there is more literature than this review has revealed. A contributory factor could be, as identified in Chapter 2, that the search strings used to construct the CASE database include broad terms such as 'impact' and 'benefit' but not specific social benefit terms relevant to the current project.

We can only conclude on heritage and social impacts, therefore, by stating that the evidence base is weak in comparison with sport and the arts, but the systematic review process has undoubtedly missed some important references.

5.1 Heritage and Social Capital

The systematic review identified eight studies of the relationship between heritage and social capital, comprising:

- F** 3 cross-sectional studies
- G** 4 case studies / qualitative studies
- I** 1 narrative review

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of heritage and social capital are summarised in Table A9.1 in Appendix 9.

5.1.1 Social Inclusion

Bradley *et al.* (2009^F) report that although a very strong sense of place can have less positive consequences (e.g. fostering an 'embattled' and unwelcoming localised sense of identity), there are more references in the literature to rootedness (working with higher levels of social capital) supporting beneficial social outcomes. They report that there is little literature suggesting raised social capital for people living in more historic built environments. However, analysis of their survey data demonstrates that a historic built environment has a significant and positive relationship with social capital for adults.

Pendlebury, Townshend & Gilroy (2004^I) set out a framework for considering how the wider cultural built heritage (CBH) might contribute to social inclusion. This conceptual paper identifies a fundamental divide between the role of CBH as either historic places or opportunity spaces in which regeneration may occur. However, in neither case is action necessarily socially inclusive. The paper concludes that a greater clarity of objectives and definitions is necessary if CBH is to meet its potential to be socially inclusionary.

The National Audit Office (2009^G) reviewed English Heritage's approach to broadening its participation base, including reviewing 251 outreach projects relevant to diversity in participation at English Heritage properties. These included people from ethnic minorities, from lower socioeconomic groups or with disabilities. However, evaluation of impacts has not been undertaken systematically so it is not possible to judge the outcomes which might be relevant to social inclusion. Rahim & Mavra (2009^G), as part of the National Audit Office research, conducted qualitative research with the three under-represented groups in heritage participation. They concluded with five common themes from the under-represented groups: lack of awareness of heritage; assumptions about typical audiences for heritage; perceived cultural irrelevance of heritage; cost barriers; and poor transport links. However, the study does not directly consider how heritage contributes to social inclusion.

5.1.2 Conclusion on Heritage and Social Capital

The literature reviewed suggests potentially mixed effects of heritage on social capital, with one study identifying an empirical link but others being more neutral on the likelihood of social inclusion in heritage. However, heritage has not been the subject of much empirical research in relation to social capital. The Taking Part survey (DCMS) provides excellent statistics on participation, and English Heritage has been taking a more systematic view of research, which includes their annual publication 'Heritage Counts', the 2012 edition of which refers to 470,000 volunteers in heritage. However, there is no evidence in the review of the direct relationship

between heritage participation and most of the different elements of social capital, such as bonding capital, bridging capital, linking capital and volunteering, and the ways in which heritage might be linked to such benefits.

5.2 Heritage and Multiple Impacts

The systematic review identified eight studies of the relationship between Heritage and Multiple Impacts, comprising:

- F** 1 cross-sectional study
- G** 4 case studies / programme evaluations
- I** 3 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of heritage and multiple impacts are summarised in Table A9.2 in Appendix 9.

5.2.1 Evidence of Heritage and Impacts

Maeer, Fawcett & Gillick (2012^l) summarise project evaluations and studies which identify examples of improved social inclusion and social cohesion, personal skill development and improved self concepts for volunteers, and the contribution of heritage to wellbeing. However, the quality of evidence is not assessed and many of the studies referred to are broader than heritage - e.g. referring to the built environment, natural environment, green space. Burns Owens Partnership (2009a^F), in a cross section survey, found that participation in Heritage Lottery Fund (HLF) projects helps to maintain and deepen the skills, knowledge and social networks of volunteers and to increase their sense of belonging to their local communities. ECOTEC (2004^G) suggested that Anglican cathedrals in England make a significant contribution to both economic and social wellbeing, the latter including education, training and volunteering opportunities, in addition to the potential for community outreach work, although no evidence is provided to support this claim. McDonald (2004^G) for Heritage Australia found that people are highly motivated to engage in heritage activities that they find directly relevant to their own specific interests, culture or history, but they do not link this to potential social impacts.

Applejuice (2008^G) reports that HLF funded projects create opportunities for the achievement of a variety of positive outcomes including some individual benefits such as enjoyment, learning and changes to values; but also some social benefits, including skills development for participants, improvements in health and wellbeing, and development of different facets of social capital - i.e. diverse audiences, especially where project activities are targeted at specific groups or communities, social cohesion, improved inter-generational links, and varied opportunities for volunteering. The evidence base for these claims is largely qualitative testimonies from project leads, together with case study evidence from individual projects.

Ela Palmer Heritage (2008^l) reviews literature on heritage-led regeneration but provides limited evidence of social impacts: i.e. anecdotal evidence of the effects on social capital formation, assumed/potential effects on health, conflicting evidence of the effects on crime, and piecemeal evidence of effects on intermediate education outcomes such as children's enthusiasm. Thomas (2007^G) investigates the potential for enterprise in the heritage tourism sector of one region and concludes that intrapreneurial behaviour in existing organizations is directly linked to staff engagement and empowerment. No link is made, however, to social impacts.

5.2.2 Conclusion on Heritage and Multiple Impacts

The literature reviewed in this section is characterised by consideration of a multiplicity of impacts from heritage, rather than concentrating on one impact. Many of the claims made for the social impacts of heritage, however, do not develop from consideration of heritage's *potential* to create individual, social and economic impacts, to measurement of actual impacts. And when evidence is cited, it is typically qualitative, and not generalisable.

It is possible that the core database used for this review is not conducive to thorough coverage of literature on the social impacts of heritage. The current systematic review, for example, did not originally identify the Heritage Lottery Fund's annual research review of the values and benefits of heritage (Maer, Fawcett & Gillick, 2012').

6. Literature Review: Museums, Libraries and Archives

Summary of Social Impacts of Museums, Libraries and Archives

For social capital, education and wellbeing impacts, the Museums, Libraries and Archives (MLA) literature is more aspirational than evidential, with many references identifying the sector's potential for social impacts, and case study professionals' perceptions of such impacts, but few providing empirical analysis of the sector's contribution to social impacts. When evidence is presented, it is typically in the form of qualitative research from case studies, from which generalisation is problematic.

The most obvious way in which MLA promotes social capital is through the use of volunteers. Other elements of social capital are less evident in the literature reviewed, including social inclusion where the contribution of MLA is mixed, with a potential to engage with social inclusion issues, but also some exclusionary perceptions of MLA. Volunteers are the most tangible manifestation of social capital in museums and galleries.

Evidence on the effects of MLA on education impacts from the systematic review can only be described as weak and with mixed results.

The literature on the relationship between MLA and wellbeing revealed by the systematic review is confined to one advocacy study for museums, and two positive studies of a particular form of therapy using books and poetry - bibliotherapy.

The systematic literature review disclosed no publications for review on the effects of MLA on health or crime.

6.1 Museums, Libraries and Archives and wellbeing

The systematic review identified only three studies of the relationship between MLA and wellbeing, including:

- G** 1 programme evaluation
- I** 2 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of MLA and wellbeing are summarised in Table A10.1 in Appendix 10.

Two studies refer to library and bibliotherapy, and one relates to museums and happiness.

6.1.1 Bibliotherapy

Bibliotherapy is an expressive therapy that uses an individual's relationship to the content of books and poetry and other written words as therapy. Bibliotherapy is often combined with writing therapy. It is still sparsely studied, yet in her literature review, Brewster (2009^l) shows the positive contribution made by bibliotherapy to the wellbeing of readers, through informal acts such as helping people find books, discussing books with readers, and fostering reading groups.

Discussing a 'reading revolution' in the United Kingdom, Bolitho (2011^G) describes her experience of setting up a pilot reading group in Australia. Bibliotherapy, she reports, recognizes the value of sharing good literature and has the potential to improve wellbeing and social connection in older people.

6.1.2 Museums and Happiness

Thompson *et al.* (2011^l) discuss how the UK museum sector can play a more significant role in creating a happier and more sustainable society. The Happy Museum Project tries to encourage wellbeing, for example by engaging more deeply with communities. The paper makes the case for the impact museums can have on the wellbeing of individuals and communities, but with advocacy rather than evidence.

6.2 Museums, Libraries and Archives and Social Capital

The systematic review identified 12 studies of the relationship between MLA and social capital, comprising:

- D** 1 time-series study
- F** 2 cross-sectional studies
- G** 8 programme evaluations / case studies / qualitative studies
- I** 1 narrative reviews

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of MLA and social capital are summarised in Table A10.2 in Appendix 10.

6.2.1 Social Inclusion

The literature suggests that social inclusion impacts are unproven for MLA. McCall (2009^G) found that museum curators were not good at engaging with social inclusion issues, although they employed socially inclusive actions in normal practice. Lockyer-Benzie (2004^G) in Australia found the public library service had not approached social inclusion formally, but indirectly social inclusion is a consideration. Morris Hargreaves McIntyre (2002^G) identified opportunities for museums to engage socially excluded communities, enhancing social inclusion and combating discrimination. Jensen (2010^G) found that museums' outreach activity provided a bridge between vaguely remembered childhood museum experiences and adulthood for the mothers engaged. The outreach visits provided an all-around positive experience for the young mothers (all under 22) and their young children (all under three). The exclusionary view of museums' role therefore needs challenging by appropriate programmes and associated evidence. ERS (2010^G) found emerging themes and lessons for public libraries, particularly around their role in civic engagement in local communities, sometimes with the help of volunteers, and their ability to work in partnership with voluntary and community based organisations.

6.2.2 Volunteering

Volunteers are a substantial manifestation of social capital in museums and galleries. Baird and Greenaway (2009^F) surveyed museums' leaders to investigate the role and impact of volunteers in museums and galleries, and the impacts of volunteering on workforce development, the volunteers themselves and on communities. Key findings include: 90% of respondent museums have volunteer staff and nearly a quarter are entirely run by volunteers; volunteers significantly increase the organisation's capacity; the benefits of volunteering for volunteers include skills development and enhanced social capital. The National Institute of Adult Continuing Education (2009^G) found that In Touch, a volunteer programme run jointly by the Manchester Museum and Imperial War Museum North, does more than teach individuals about the museums and their collections, it provides skills and experience they can transfer to their lives and future employment.

6.2.3 Conclusions on MLA and Social Capital

The most obvious way in which MLA promotes social capital is through the use of volunteers. Other elements of social capital are less evident in the literature reviewed, including social inclusion where the contribution of MLA is at best viewed as mixed, with potential to engage with social inclusion issues, but also some exclusionary perceptions of MLA.

6.3 Museums, Libraries and Archives and Education

The systematic review identified seven studies of the relationship between MLA and education impacts, comprising:

- A 1 systematic review
- C 1 cohort study
- F 1 cross-sectional study
- G 3 case studies / programme evaluations
- I 1 narrative review

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of MLA and education are summarised in Table A10.3 in Appendix 10.

6.3.1 Intermediate Outcomes

Newman *et al.* (2010^A) found promising but insufficient evidence that use of school libraries improves education attainment; and visiting museums, galleries and heritage sites improves students' attitudes to school and self confidence in their learning abilities. Hooper-Greenhill and Dodd (2002^C) evaluated the Education Challenge Fund and identified increases in the educational capacity of smaller museums and enhanced visitor experiences as a result of the programme. The findings, however, are more centred on museums' capacity to deliver rather than the impacts from the educational experience of the visitors. Kanevsky *et al.* (2008^C) found no difference between participants and non-participants in a museum-based school programme in respect of positive self-perceptions - character, self-efficacy and attitude toward school - over a two year period.

6.3.2 Educational Attainment

The literature reviewed is not consistent in respect of educational attainment benefits from MLA. In the USA, Porter (2005^I) found that participation at libraries was not intense enough to make substantial differences in literacy. The implementation research suggests why improving student persistence is so difficult and reveals the kinds of support that adult learners need in order to persist. However, this negative result is offset by Morris Hargreaves McIntyre (2010^G) who in a cross-sectional study found that children were motivated to engage in education following their visits to museums or libraries.

6.3.4 Conclusions on MLA and Education

The evidence of the relationship between MLA and educational intermediate and final outcomes is tenuous at best; the depth of research available is limited.

6.4 Museums, Libraries and Archives and Multiple Impacts

The systematic review identified 16 studies of the relationship between MLA and Multiple Impacts (where more than one social impact is considered) comprising:

- D** 2 time-series studies
- F** 4 cross-sectional studies
- G** 5 case studies
- I** 4 narrative reviews
- J** 1 expert opinion

The position of these in the hierarchy of evidence (see Table 2.1) is indicated on the left hand side of the list above. The studies of MLA and multiple impacts are summarised in Table A10.4 in Appendix 10.

6.4.1 Conceptual Issues: MLA as a Catalyst for Social Change

AEA (2005^F), in an evaluation of museum audiences in the NE of England, state that social impact is an imprecise concept, used in multiple ways by government, researchers, cultural institutions and others. They assert there is no agreed-upon taxonomy of preferred audiences, preferred impacts or preferred techniques to measure impacts, and that little distinction is currently made between short- and long-term impacts. Even recent and innovative data-collection efforts, such as the GLLAM surveys, catch little information on the social impact of museum programmes. Burns Owens Partnership (2005^I) in a literature review, found that their review of research into the social impact of museums, libraries and archives showed that there were three major weaknesses in the evidence base: the lack of any substantial longitudinal, comparative data on social impact; the absence of an agreed model for describing social impact; and a comparative lack of research into social impact related to cultural diversity and health/mental health. PwC (2008^J), for the MLA, found that many of the social impacts, given their more nebulous nature, prove more challenging to quantify. This indicates that while there is an underlying assumption that the MLA sector does have social impacts, there is a lack of research that gives solid credence to this.

6.4.2 Evidence of Impacts

Dodd, Jones, Watson, Golding & Kirk (2011^G), in the report for the MLA on the 'Their Past Your Future' programme note that the programme showed the critical and powerful role that cultural organisations can play in communities in developing a sense of self-worth. The groundwork has been laid for the development of much more sustained contact with communities and the development of long-term strategies that will put community needs at the heart of what MLA do. Burns Owens Partnership (2009b^I) found that public libraries in England are involved in the delivery of a wide ranging menu of services, activities and resources but the interaction people have with libraries is less intensive than with other public services, with milder social impacts resulting. Nevertheless, the report identifies social impacts in the form of education, health and social capital, and suggests that evidence of final outcomes is strong because of the centrality of literacy and learning to library services. McClure, Fraser, Nelson & Robbins (2001^G), in a case study from the USA, indicate that patrons believe libraries contribute to their financial wellbeing, provide economic impacts to local businesses, and support the prosperity of the community. However, this case study is confined to economic benefits and does not extend to social benefits.

Streadfield, Bryson & Usherwood (2002^F) state that community identity was a significant feature in all eight case studies of libraries that they investigated. Simon Jaquet Consultancy Services

Ltd (2009^G) in a review of Scottish museums found that they contribute to the development of physical, human, social, economic and cultural capital within their communities and take a lead in creating community cohesion in their areas. Wavell *et al.* (2002^I) found that the most compelling evidence indicates that the sector has an impact on personal development: i.e. skills acquisition; new experiences; increased self-confidence and self-esteem; changed or challenged attitudes; developing creativity, cultural awareness, communication and memory; and providing support for educational courses. However, at best these could be considered intermediate outcomes for social impacts, i.e. antecedents for final outcomes such as education achievement and social capital. Wavell *et al.* (2002^I) acknowledge that despite a perception by MLA professionals of wider social impacts such as community cohesion, health and crime, actual evidence of these impacts is not apparent. They also identify that while the profession is beginning to recognise access as a priority, there is a need to increase access throughout the sector.

6.4.3 Conclusions on MLA and Multiple Impacts

There is a general lack of evidence regarding MLA's social impacts, despite a general professional awareness of the need for such evidence and a common perception that social impacts are generated by the sector. Burns Owens Partnership (2009b^I) sum up the problem, in the context of libraries but transferable to the whole sector:

'... current evidence base still remains insufficient in a number of ways. Many of the weaknesses in the evidence base are generic, and have been identified in previous similar literature reviews, namely a:

- predominance of one-off evaluations of time-limited programmes and pilot schemes over research on core services;
- lack of baselines against which to measure change;
- lack of in-depth qualitative research that analyses the specific nature of the interactions that take place'

7. Conclusions

This review has identified literature relating to a range of social impacts resulting from increased participation and engagement with culture and sport (objective 1, see section 1.2). It has disclosed that there are considerable differences in the weight of evidence available for the social impacts of sport and culture. These can be summarised as follows.

- Sport has a considerable literature relevant to social impacts and might be seen to have 'turned a corner' from the previous state which was criticised by many academics as being under-researched. There are links made between individual and social benefits in some cases for sport.
- The arts have considerable literature relating to social impacts but not of such depth or extent as sport; and with evidence gaps.
- Heritage and MLA are lagging considerably behind the other sectors in both the quantity and quality of literature addressing their relationship with social impacts. They are particularly deficient in evidence.
- Many of the social impacts are inter-related, making sport and culture potentially highly cost-effective interventions.

This league table is not meant to invite complacency among sport researchers and decision-makers. There are still a lot of gaps in the sports evidence but they are relatively minor compared with the lack of literature in heritage and MLA.

It must be acknowledged that the core database from which the systematic literature review was searched - CASE - may not have been conducive to identifying all the relevant literature, as has been identified in a couple of sub-sectors in the report. This discloses a weakness in the systematic review process - that it is only as comprehensive as the databases and search processes allow it to be. In the case of CASE, the database was not compiled for the purposes of identifying social impacts literature specifically. This issue seems to have affected heritage and MLA searches particularly.

There are common deficiencies in the evidence available from the literature reviewed. These deficiencies are as follows:

- negative social impacts, particularly in culture;
- differential effects of different activities (although some sports literature attempts this in reference to crime and education);
- differential effects on different sub-groups of the population (particularly relevant to the second objective of this review), although in sport and arts there is often a focus on young people or older people;
- confidence testing of causality in the relationship between sport and culture and social impacts;
- strength and duration of effects of sport and culture on social impacts;
- effects of frequency, intensity and duration of participation on social impacts;
- identifying and valuing the social impacts which are generated by individual participation; and
- identifying the costs of public sector interventions and expressing social benefits in relation to these costs.

The last of these deficiencies has prevented the literature review from fulfilling the specific requirements of the third objective (see section 1.2) - i.e. relating DCMS and associated ALB interventions and policies with social impacts. Many of the intervention-based studies in the literature review are about publicly funded projects and programmes but not all the literature identifies the funders. Furthermore, many of the studies are of initiatives in other countries and we have not conducted separate analysis of the quality and quantity of information from different countries.

The results of the literature review have implications for policy decisions. At a fundamental level, there is a considerable weight of evidence demonstrating social impacts from sport and culture, which justify policy interventions with public funding. Without these, it is unlikely that individuals will participate to the extent necessary to fulfil the social impact potential of sport and culture.

At a more micro level of consideration, there are two related policy implications. It is important to promote initiatives that are explicitly designed to generate specific social impacts; rather than population-wide policies. It is also important to ensure that complementary features are in place to maximise the social impact realisation through exploitation of important mediating factors. These include safe environments, high quality leadership, structured sessions, and expert support for personal development.

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6th June 2014

8. References

- Aarnio, M. (2003). Leisure-time physical activity in late adolescence: A cohort study of stability, correlates and familial aggregation in twin boys' and girls'. *Journal of Sports Science and Medicine, Volume 2, Supplement 2*.
- ACTSport. (2004). *Impact of Sport and Physical Recreation on the ACT: Executive Summary*. Hackett: ACT.
- Adamson, D., Fyfe, H. & Byrne, P. (2008). *Hand in hand. Arts-based activities and regeneration*. University of Glamorgan. Cardiff: Arts Council of Wales.
- AEA Consulting. (2005). *Tyne & Wear Museums Bristol's Museums, Galleries & archives: Social Impact Programme Assessment*. London and New York: AEA Consulting.
- Albuquerque-Sendin, F., Barberio-Mariano, E., Brandao-Santana, N., Rebelatto, D.A.N. and Rebelatto, J.R. (2012). Effects of an adapted physical activity program on the physical condition of elderly women: an analysis of efficiency. *Revista Brasileira de Fisioterapia, Volume 16, Issue 4, Pages 328-336*.
- Aleman, K.B. and Meyers, M.C. (2010). Mountain biking injuries in children and adolescents. *Sports Medicine, Volume 40, Issue 1, Pages 77-90*.
- Allison, M. (1999). *The contribution of sport to health*. Edinburgh: Sportscotland.
- Annabel Jackson Associates Ltd. (2011). *Turning Point Network final evaluation report*. London: Arts Council England.
- Annemans, L., Lamotte, M., Clarys, P. and Van den Abeele, E. (2007). Health economic evaluation of controlled and maintained physical exercise in the prevention of cardiovascular and other prosperity diseases. *European Journal of Cardiovascular Prevention and Rehabilitation, Volume 14, Issue 6, Pages 815-824*.
- Apekey, T.A., Morris, A.E.J., Fagbemi, S. and Griffiths, G.J. (2012). Benefits of moderate-intensity exercise during a calorie-restricted low-fat diet. *Health Education Journal, Volume 71, Issue 2, Pages 154-164*.
- Applejuice Consultants. (2008). *Social impact of Heritage Lottery funded projects. Evaluation report on research conducted for Heritage Lottery Fund during 2006-2007*. Heritage Lottery Fund.
- Arts Alliance. (2010). *What really works? Arts with offenders*. London: Arts Council England.
- Arts Council England. (2004). *The impact of the arts: some research evidence*. London: Arts Council England.
- Arts Council England. (2006). *The power of art visual arts: evidence of impact. Regeneration, health, education and learning*. London: Arts Council England.
- Arts Council England. (2006). *What's the point? Using drama to engage young people at risk*. London: Arts Council England.

Arts Council England. (2009). *Disability equality scheme annual report 2008/09*. London: Arts Council England.

Aslam, S., Georgiev, H., Mehta, K. & Kumar, A. (2012). Matching research design to clinical research questions. *Indian Journal of Sexually Transmitted Diseases and AIDS, Volume 33, Issue 1*, Pages 49-53.

Audit Commission. (2009). *Tired of hanging around: Using sport and leisure activities to prevent anti-social behaviour by young people*. London: Audit Commission.

Audrain-McGovern, J., Rodriguez, D., Wileyto, E.P., Schmitz, K.H. and Shields, P.G. (2006). Effect of team sport participation on genetic predisposition to adolescent smoking progression. *Archives of General Psychiatry, Volume 63, Issue 4*, Pages 433-441.

Australian Expert Group in Industry Studies. (2005). *Social impacts of participation in the arts and cultural activities. Stage two report: evidence, issue and recommendations*. Cultural Ministers Council. Statistics Working Group.

Aydin, K. (2009). Social stratification of culture and leisure in Turkey. *Cultural Trends, Volume 18, Issue 4*, Pages 295-311.

Aylward, N. (2005). *Impact of youth theatres on communities*. National Association of Youth Theatres. Online: Darlington.

Azmier, J.J. (2002). *Culture and Economic Competitiveness: An Emerging Role for the Arts in Canada. A Western Cities Project Discussion Paper*. Canada West Foundation.

Babiyak, M., Blumenthal, J.A., Herman, S., Khatri, P., Doraiswamy, M., Moore, K., Craighead, W.E., Baldewicz, T.T. and Krishnan, K.R. (2000). Exercise treatment for major depression: maintenance of therapeutic benefit at 10 months. *Psychosomatic Medicine, Volume 62, Issue 5*, Pages 633-638.

Bailey, R. (2005). Evaluating the relationship between physical education, sport and social inclusion. *Educational Review, Volume 57, Issue 1*, Pages 71-90.

Bailey, R. (2006). Physical education and sport in schools: a review of benefits and outcomes. *Journal of School Health, Volume 76, Issue 8*, Pages 397-401.

Bailey, R., Armour, K., Kirk, D., Jess, M., Pickup, I. and Sandford, R. (2009). The educational benefits claimed for physical education and school sport: an academic review. *Research Papers in Education, Volume 24, Issue 1*, Pages 1-27.

Baird, L. & Greenaway, L. (2009). *Volunteering in museums. A research study into volunteering within museums. Full report*. Museums Galleries Scotland.

Baker, L.D., Frank, L.L., Foster-Schubert, K., Green, P.S., Wilkinson, C.W., McTiernan, A., Plymate, S.R., Fishel, M.A., Watson, G.S., Cholerton, B.A., Duncan, G.E., Mehta, P.D. and Craft, S. (2010). Effects of aerobic exercise on mild cognitive impairment: a controlled trial. *Archives of Neurology, Volume 67, Issue 1*, Pages 71-79.

Balfour, M. (2004). *Theatre in Prison: Theory and Practice*. Bristol: Intellect Books.

- Bamford, A. & Glinkowski, P. (2010). *Wow "It's Music Next": Impact Evaluation of Wider Opportunities Programme in Music at Key Stage Two*. Federation of Music Services.
- Bash, S.R. (2006). *Thriving Arts: Thriving Small Communities*. *GIA Reader, Volume 17, Issue 3*.
- BDRC. (2009). *Broadening Access to the Historic Environment: Understanding Families from Lower Socio-Economic Groups - Case Study at Bolsover Castle*. English Heritage.
- Beesley, K., White, J.H., Alston, M.K., Sweetapple, A.L. & Pollack, M. (2011). Art after stroke: the qualitative experience of community dwelling stroke survivors in a group art programme. *Disability and rehabilitation, Volume 33, Pages 23-24*.
- Begg, D.J., Langley, J.D., Moffitt, T. and Marshall, S.W. (1996). Sport and delinquency: an examination of the deterrence hypothesis in a longitudinal study. *British Journal of Sports Medicine, Volume 30, Issue 4, Pages 335-341*.
- Benediktsson, M.O. (2012). Bridging and bonding in the academic melting pot: Cultural resources and network diversity. *Sociological Forum, Volume 27, Issue 1, Pages 46-69*.
- Bird, K., Newman, M., Tripney, J. & EPPI-Centre. (2011). *Updating the CASE database: analysis of original approach*. Institute of Education, University of London.
- Blomfield, C. and Barber, B.L. (2010). Australian adolescents' extracurricular activity participation and positive development: is the relationship mediated by peer attributes? *Australian Journal of Educational & Developmental Psychology, Volume 10, Pages 114-128*.
- Bloom, M., Grant M. and Watt, D. (2005). *Strengthening Canada: The Socio-economic Benefits of Sport Participation in Canada*. The Conference Board of Canada.
- BMRB. (2006). *Taking Part: the National Survey of Culture, Leisure & Sport: Provisional Headline Findings on Engagement, Future Engagement and Non-engagement in Cultural and Sporting Activities*. London: DCMS.
- Bolitho, J. (2011). Reading into Wellbeing: Bibliotherapy, Libraries, Health and Social Connection. *Australasian Public Libraries and Information Services, Volume 24, Issue 2, Pages 89-90*.
- Bowen, M.E. (2012). A Prospective Examination of the Relationship Between Physical Activity and Dementia Risk in Later Life. *American Journal of Health Promotion, Volume 26, Issue 6, Pages 333-340*.
- Bowles, B., Lankford, J., Lankford, S., Grybovych, O., Fleming, K., Fuller, K., Lankford, J. and Printz, J. (2011). *Economic & Health Benefits of Bicycling in Iowa*. Sustainable Tourism and Environment Program, University of Northern Iowa.
- Braddock, J.H., Hua, L. and Dawkins, M.P. (2007). Effects of Participation in High School Sports and Nonsport Extracurricular Activities on Political Engagement among Black Young Adults. *Negro Educational Review, Volume 58, Issue 3, Pages 201-216*.
- Bradley, D., Bradley, J., Coombes, M. & Tranos, E. (2009). *Sense of place and social capital and the historic built environment*. English Heritage.
- Bradt, J., Magee, W.L., Dileo, C., Wheeler, B.L. & McGilloway, E. (2010). Music therapy for acquired brain injury. *Cochrane Database of Systematic Reviews, Issue 7*. Wiley & Sons Ltd.

Bragg, S. & Manchester, H. (2007). *Creativity, School Ethos and the Creative Partnerships programme. Final Report of the project: Evaluation of the nature and impact of the Creative Partnerships programme on school ethos, 2009-10*. Newcastle: Creativity, Culture and Education.

Bragg, S. (2007). *Consulting young people: a review of the literature*. Creative Partnerships. London: Arts Council England.

Bragg, S., Manchester, H. & Faulkner, D. (2009). *Youth Voice in the Work of Creative Partnerships: a Report for Creative Partnerships*. Creativity, Culture and Education. Newcastle: Creativity, Culture and Education.

Brewster, L. (2009). Reader Development and Mental Wellbeing: The Accidental Bibliotherapist. *Australasian Public Libraries and Information Services, Volume 22, Issue 1*, Pages 13-16.

Bridges, B. (2006). Fun, fervor or fitness?: Sporting cultures and happiness, in Ng, Y.K. and Ho, P.L.S. *Happiness and public policy: theory, case studies, and implications*. Palgrave Macmillan. Pages 221-234.

Broh, B.A. (2002). Linking Extracurricular Programming to Academic Achievement: Who Benefits and Why? *Sociology of Education, Volume 75, Issue 1*, Pages 69-95.

Brosnahan, J., Steffen, L.M., Lytle, L., Patterson, J. and Boostrom, A. (2004). The relation between physical activity and mental health among Hispanic and non-Hispanic white adolescents. *Archives of Pediatrics & Adolescent Medicine, Volume 158, Issue 8*, Pages 818-823.

Buchman, A.S., Boyle, P.A., Yu, L., Shah, R.C., Wilson, R.S. and Bennett, D.A. (2012). Total daily physical activity and the risk of AD and cognitive decline in older adults. *Neurology, Volume 78, Issue 17*, Pages 1323-1329.

Buchman, A.S., Yu, L., Boyle, P.A., Shah, R.C. and Bennett, D.A. (2012). Total daily physical activity and longevity in old age. *Archives of Internal Medicine, Volume 172, Issue 5*, Pages 444-446.

Bunde-Birouste, A., Nathan, S., McCarroll, B., Kemp, L., Shwe, T. and Grand Ortega, M. (2012). *Playing for Change: Improving People's Lives Through Football*. Football United, School of Public Health and Community Medicine. Sydney: UNSW.

Bunting, C. (2007). *Public value and the arts in England: discussions and conclusions of the arts debate*. London: Arts Council England.

BUPA. (2011). *New research puts price tag of £33billion on unhealthy lifestyle choices*.

Burnett, C. (2001). Social Impact assessment and Sport Development: Social Spin-Offs of the Australia-South Africa Junior Sport Programme. *International Review for the Sociology of Sport, Volume 36, Issue 1*, Pages 41-57.

Burnett, C. (2006). Building Social Capital Through and 'Active Community Club'. *International review for the sociology of sport, Volume 41, Issue 3*, Pages 283-294.

Burnett, C. (2009). Engaging sport-for-development for social impact in the South African context. *Sport in Society: Cultures, Commerce, Media, Politics, Volume 12, Issue 9*, Pages 1192-1205.

- Burnett, C. (2011). Local agency as a strategic imperative in sport for development. *African Journal for Physical, Health Education, Recreation and Dance, Supplement*, Page 916
- Burns Owens Partnership. (2005). *New directions in social policy: developing the evidence base for museums, libraries and archives in England*. London: Museums, Libraries and Archives Council.
- Burns Owens Partnership. (2009a). *Assessment of the social impact of participation in HLF-funded projects. Final report*. Heritage Lottery Fund.
- Burns Owens Partnership. (2009b). *Capturing the impact of libraries. Final report*. London: DCMS.
- Burton, J.M. and Marshall, L.A., (2005). Protective Factors for Youth Considered at Risk of Criminal Behaviour: Does Participation in Extracurricular Activities Help? *Criminal Behaviour and Mental Health, Volume 15, Issue 1*, Pages 46-64.
- Buys, L. & Miller, E. (2009). Enhancing Social Capital in Children via School-Based Community Cultural Development Projects: A Pilot Study. *International Journal of Education & the Arts, Volume 10, Issue 3*.
- Byberg, L., Melhus, H., Gedeberg, R., Sundstrom, J., Ahlbom, A., Zethelius, B., Berglund, L.G., Wolk, A. and Michaelsson, K. (2009). Total mortality after changes in leisure time physical activity in 50 year old men: 35 year follow-up of population based cohort. *BMJ*. 338:b688.
- Cadilhac, D.A., Cumming, T.B., Sheppard, L., Pearce, D.C., Carter, R. and Magnus, A. (2011). The economic benefits of reducing physical inactivity: an Australian example. *International Journal of Behavioral Nutrition & Physical Activity, Volume 8, Issue 1*, Pages 99-106.
- Canadian Parks/Recreation Association. *Impact and Benefits of Physical Activity and Recreation on Canadian Youth-at-risk*.
- Carlsen, J., Ali-Knight, J. & Robertson, M. (2007). ACCESS--A research agenda for Edinburgh festivals. *Event Management, Volume 11, Issues 1-2*, Pages 3-11.
- Carmichael, D. (2008). *Youth Sport vs. Youth Crime: Evidence that youth engaged in organized sport are not likely to participate in criminal activities*. Ontario: Active Health Links Inc.
- Carpenter, E. (2004). *Out of the hopeless box. Creative neighbourhoods: an evaluation*. Arts Council England. London: Arts Council England.
- Carreres-Ponsoda, F., Carbonell, A. E., Cortell-Tormo, J. M., Fuster-Lloret, V. and Andreu-Cabrera, E. (2012). The relationship between out-of-school sport participation and positive youth development. *Journal of Human Sport and Exercise, Volume 7, Issue 3*.
- Caruso, R. (2011). Crime and sport participation: Evidence from Italian regions over the period 1997–2003. *The Journal of Socio-Economics, Volume 40, Issue 5*, Pages 455-463.
- Cathey, K.S. (2008). *The Effect of Athletic Participation on Academic Achievement of Middle School Students*. ETD Collection for Tennessee State University. Paper AAI3310733.

- Catterall, J., Dumals, S.A. & Hampden-Thompson, G. (2012). *The arts and achievement in at-risk youth: Findings from four longitudinal studies*. Research Report #55. National Endowment for the Arts. Washington.
- Cayton, H. (2007). *Report of the Review of Arts and Health Working Group*, Department of Health, London.
- Centers for Disease Control and Prevention. (2010). *The Association Between School-Based Physical Activity, Including Physical Education, and Academic Performance*. Atlanta, GA: U.S. Department for Health and Human Services.
- Chapin, T. (2002). *Identifying the Real Costs and Benefits of Sports Facilities*. Lincoln Institute of Land Policy.
- Cheney, T. (2002). The presence of museums in the lives of Canadians, 1971-1998: What might have been and what has been. *Cultural Trends, Volume 12, Issue 48*, Pages 37-67.
- Chenoweth, D. and Leutzinger, J. (2006). The Economic Cost of Physical Inactivity and Excess Weight in American Adults. *Journal of Physical Activity and Health, Volume 3, Issue 2*, Pages 148-163
- Cheville, A.L., Dose, A.M., Basford, J.R. and Rhudy, L.M. (2012). Insights Into the Reluctance of Patients With Late-Stage Cancer to Adopt Exercise as a Means to Reduce Their Symptoms and Improve Their Function. *Journal of Pain and Symptom Management, Volume 44, Issue 1*, Pages 84-94.
- Clark, B. & Button, C. (2011). Sustainability Transdisciplinary Education Model: Interface of Arts, Science, and Community (STEM). *International Journal of Sustainability in Higher Education, Volume 12, Issue 1*, Pages 41-54.
- Clift, S., Hancox, G., Staricoff, R. & Whitmore, C. (2008). *Singing and Health: A Systematic Mapping and Review of Non-Clinical Research*. Sidney De Haan Research Centre for Arts and Health.
- Clift, S., Skingley, A., Coulton, S. & Rodriguez, J. (2011). *A controlled evaluation of the health benefits of a participative community singing programme for older people (Silver Song Clubs)*. Sidney De Haan Research Centre for Arts and Health.
- Coalter, F. (1996). *Sport and anti-social behaviour: a policy-related review*. Research Digest, Scottish Sports Council, No.41.
- Coalter, F. (2005). *The Social Benefits of Sport: An Overview to Inform the Community Planning Process*. SportScotland Research Report no. 98.
- Coalter, F. (2007). *A wider social role for sport: who's keeping the score?* London and New York: Routledge.
- Coalter, F., Long, J. & Duffield, B. (1986). *Rationale for public sector investment in leisure*. London: Sports Council.
- Colditz, G.A. (1999). Economic costs of obesity and inactivity. *Medicine and Science in Sports and Exercise, Volume 31, Supplement 11*, Pages 663-667.

- Colin Higgs Consulting. (2008). *A sport plan for New Brunswick*. Dept. of Wellness, Culture and Sport, Sport New Brunswick.
- Colman, R. Hayward, K. (2002). *The cost of physical inactivity in Nova Scotia. Measuring Sustainable Development: Application of the genuine progress index to Nova Scotia*. GPI Atlantic.
- Cooley, N.J. (2003). *Arts and culture in medicine and health: A survey research paper*. Cooley & Associates: Embracing Change Creatively.
- Courneya, K.S., Tamburrini, A.L., Woolcott, C.G., McNeely, M.L., Karvinen, K.H., Campbell, K.L., McTiernan, A., Friedenreich, C.M. (2011). The Alberta Physical Activity and Breast Cancer Prevention Trial: quality of life outcomes. *Preventive Medicine, Volume 52, Issue 1*, Pages 26-32.
- Cox, S. (2012). *Game of Life: How sport and recreation can help make us healthier, happier and richer*. The Sport and Recreation Alliance.
- Creative New Zealand. (1999). *Arts is Every day: A survey of arts participation in New Zealand Adults*. Wellington: Creative New Zealand.
- D'Souza, J., Low, N., Lee, L., Morrell, G. & Hall, J. (2011). *Understanding the drivers of volunteering in culture and sport: analysis of the Taking Part Survey*. CASE.
- Danielsen, A. (2008). The persistence of cultural divides - Reflections on the audience for culture and the arts in Norway. *International Journal of Cultural Policy, Volume 14, Issue 1*, Pages 95-112.
- Davis, C.L., Tomporowski, P.D., McDowell, J.E., Austin, B.P., Miller, P.H., Yanasak, N.E., Allison, J.D. and Naglieri, J.A. (2011). Exercise improves executive function and achievement and alters brain activation in overweight children: a randomized, controlled trial. *Health psychology, Volume 30, Issue 1*, Pages 91-98.
- Dawkins, M.P., Williams, M.M. and Guilbault, M. (2006). Participation in School Sports: Risk or Protective Factor for Drug Use Among Black and White Students? *Journal of Negro Education, Volume 75, Issue 1*, Pages 25-33.
- DCMS. (2010). *Taking Part: The National Survey of Culture, Leisure and Sport. Adult and Child Report 2009/10*. London: DCMS.
- DCMS. (2011). *Taking part: The national survey of culture, leisure and sport 2010/11*. London: DCMS.
- DCMS/Strategy Unit. (2002). *Game plan: A strategy for delivering Government's sport and physical activity objectives*. London: Cabinet Office.
- de Haan, J. & Knulst, W.P. (2000). *The Reach of the Arts*. The Netherlands Institute for Social Research. Number 166.
- Delaney & Keaney. (2006). *Cultural participation, social capital and civil renewal in the United Kingdom: Statistical evidence from national and international survey data*. Economic and Social Research Institute and Institute for Public Policy Research.
- Devlin, P. (2010). *Restoring the Balance: the effect of arts participation on wellbeing and health*. Voluntary Arts England.

DiMaggio & Mukhtar. (2004). Arts participation as cultural capital in the United States, 1982-2002: Signs of decline? *Poetics, Volume 32*, Pages 169-194.

Dodd, Jocelyn., Jones, Ceri., Watson, Sheila., Golding, Viv & Kirk, Elee. (2011). *An evaluation of the MLA Their Past Your Future 2 programme, 2008-2010*. Research Centre for Museums and Galleries, University of Leicester.

Dodd, Jocelyn., O'Riain, Helen., Hooper-Greenhill, Eilean., Sandell, Richard., Heritage Lottery Fund. (2002). *A catalyst for change: the social impact of the Open Museum*. Research Centre for Museums and Galleries.

Downward, P. and Rasciute, S. (2011). An economic analysis of the subjective health and wellbeing of physical activity in Rodriguez, P., Kesenne, S. and Humphreys B.R. *The Economics of Sport, Health and Happiness: The promotion of wellbeing through sporting activities*. Edward Elgar Publishing Limited. Pages 33-53.

Downward, P. and Rasciute, S. (2011). Does sport make you happy? An analysis of the well-being derived from sports participation. *International Review of Applied Economics, Volume 25, Issue 3*, Pages 331-348.

Duxbury, N & Gillette, E. (2007). *Culture as a Key Dimension of Sustainability: Exploring Concepts, Themes, and Models*. Centre of Expertise on Culture and Communities.

Eastburn, C. (2003). *Gongs Behind Bars: Evaluation Report of the Good Vibrations Gamelan in Prisons Pilot Project 2003*. Firebird Trust.

Eastell, Ciara. (2008). The Partners for Change project: involving socially excluded young people in shaping public library services. *New Review of Children's Literature and Librarianship, Volume 14, Issue 1*, Pages 31-44.

ECOTEC. (2004). *The Economic and Social Impacts of Cathedrals in England*. ECOTEC Research and Consulting Limited.

Edmonton Sport Council. (2010). *Sport Investment Benefits*. Alberta: Edmonton Sport Council.

Eitle, T.M. and Eitle, D. (2002). Race, Cultural Capital, and the Educational Effects of Participation in Sports. *Sociology of Education, Volume 75, Issue 2*, Pages 123-146.

EKOS Consulting. (2008). *Contribution of Culture to the North West Economy*. Culture Northwest

Ela Palmer Heritage (2008). *The Social Impacts of Heritage-led Regeneration*. Agencies Coordinating Group, London.

Elsley, S. & McMellon, C. (2010). *Starting young? Links between childhood and adult participation in culture and science: a literature review*. Scottish Government (Scotland).

Endresen, I.M. and Olweus, D. (2005). Participation in power sports and anti-social involvement in preadolescent and adolescent boys. *Journal of Child Psychology and Psychiatry, Volume 46, Issues 5*, Pages 468-478.

ERS. (2010). *Community Engagement in Public Libraries: an evaluation as part of the Big lottery Fund Community libraries Programme*. MLA.

- Etgen, T., Sander, D., Huntgeburth, U., Poppert, H., Förstl, H. and Bickel, H. (2010). Physical activity and incident cognitive impairment in elderly persons: the INVADE study. *Archives of Internal Medicine, Volume 170, Issue 2*, Pages 186-193.
- Evans, G. (2005). Measure for measure: Evaluating the evidence of culture's contribution to regeneration. *Urban Studies, Volume 42 Issue 5/6*, Pages 959-983.
- Fauth, R.C., Roth, J.L. and Brooks-Gunn, J. (2007). Does the neighborhood context alter the link between youth's after-school time activities and developmental outcomes? A multilevel analysis. *Developmental Psychology, Volume 43, Issue 3*, Pages 760-777.
- Feinstein, L., Bynner, J. and Duckworth, K. (2005). *Leisure contexts in adolescence and their effects on adult outcomes*. Wider Benefits of Learning Research Report NO.15. Centre for Research on the Wider Benefits of Learning.
- Field, Y. & Harrow, M. (2001). *Routes across diversity: developing the arts of London's refugee communities*. A report on London Arts "Refugees and the Arts" Initiative.
- Flinn, J. & McPherson, G. (2007). *Culture matters? The role of art and culture in the development of social capital*. Leisure Studies Association.
- Forrest, D. and McHale, I.G. (2011). Subjective wellbeing and engagement in sport: evidence from England. In Rodriguez, P., Kesenne, S. and Humphreys B.R. *The Economics of Sport, Health and Happiness: The promotion of wellbeing through sporting activities* (Pages 184-199). Edward Elgar Publishing Limited.
- Fox, C.K., Barr-Anderson, D., Neumark-Sztainer, D. and Wall, M. (2010). Physical activity and sports team participation: associations with academic outcomes in middle school and high school students. *Journal of School Health, Volume 80, Issue 1*, Pages 31-37.
- Fredricks, J.A. and Eccles, J.S. (2006). Is Extracurricular Participation Associated With Beneficial Outcomes? Concurrent and Longitudinal Relations. *Developmental Psychology, Volume 42, Issue 4*, Pages 698-713.
- Fuller, S. (2009). *Youth Participation in Arts, Heritage, Culture and Community: A national conversation*. Canadian Heritage, Citizen Participation Branch.
- Gallegos-Carrillo, K., Flores, Y.N., Denova-Gutiérrez, E., Méndez-Hernández, P., Dosamantes-Carrasco, L.D., Henao-Morán, S., Borges, G., Halley-Castillo, E., Macias, N. and Salmerón, J. (2012). Physical Activity and Reduced Risk of Depression: Results of a Longitudinal Study of Mexican Adults. *Health Psychology*, No Pagination Specified.
- Galloway S., Bell, D., Hamilton, C. and Scullion, A. (2006). *Quality of Life and Wellbeing: Measuring the Benefits of Culture and Sport: Literature Review and Thinkpiece*. Edinburgh, Scottish Executive Education Department.
- Galloway, S. (2008). *The evidence base for arts and culture policy: A brief review of selected recent literature*. Centre for Cultural Policy Research, University of Glasgow, Scottish Arts Council.
- Galloway, S. (2009). Theory-based evaluation and the social impact of the arts. *Cultural Trends, Volume 18, Issue 2*. Pages 125-148.

- Gao, Z., Kaplan, M., Ray, J. and Ruggiero, T. (2011). *Physical Fitness, Academic Achievement and Student Behavior Outcomes in Delaware Public Schools*. Delaware Department of Education and Nemours Health & Prevention Services.
- Garcia, B. (2003). *Evaluation of Cultureshock, Commonwealth North West Cultural Programme*. Centre for Cultural Policy Research, University of Glasgow.
- Garcia, B., Melville, R & Cox, T (2010). *Creating an impact: Liverpool's experience as European Capital of Culture*. Impacts 08, University of Liverpool, Liverpool John Moores University.
- Gardner, M., Roth, J. and Brooks-Gunn, J. (2009). Sports participation and juvenile delinquency: the role of the peer context among adolescent boys and girls with varied histories of problem behavior. *Developmental Psychology, Volume 45, Issue 2, Pages 341-353*.
- Garrick, J.G. and Requa, R.K. (2003). Sports and fitness activities: the negative consequences. *The Journal of the American Academy of Orthopaedic Surgeons, Volume 11, Issue 6, Pages 439-443*.
- Gayo-Cal, M. (2006). Leisure and Participation in Britain. *Cultural Trends, Volume 15, Issue 2-3, Pages 175-192*.
- Gayo-Cal, M., Savage, M. and Warde, A. (2006). A Cultural Map of the United Kingdom, 2003. *Cultural Trends, Volume 15 Issue 2-3, Pages 215-239*.
- Ghosh, D. and Datta, T.K. (2012). Functional improvement and social participation through sports activity for children with mental retardation: a field study from a developing nation. *Prosthetics and Orthotics International, Volume 36, Issue 3, Pages 339-47*.
- Gierach, G.L., Chang, S.C., Brinton, L.A., Lacey, J.V.Jr., Hollenbeck, A.R., Schatzkin, A. and Leitzmann, M.F. (2009). Physical activity, sedentary behavior, and endometrial cancer risk in the NIH-AARP Diet and Health Study. *International Journal of Cancer, Volume 124, Issue 9, Pages 2139-2147*.
- Godbey, G. and Mowen, A. (2010). *The Benefits of Physical Activity Provided by Park and Recreation Services: The Scientific Evidence*. National Recreation and Park Association.
- Goldfield, G.S., Adamo, K.B., Rutherford, J. and Murray, M. (2012). The effects of aerobic exercise on psychosocial functioning of adolescents who are overweight or obese. *Journal of Pediatric Psychology, Volume 37, Issue 10, Pages 1136-1147*.
- Goodlad, R., Hamilton, C. & Taylor, P. (2002). *Not Just a Treat: Arts and Social Inclusion*. Scottish Arts Council.
- Gow, A.J., Bastin, M.E., Nabiega, S.M., Hernandez, M.C.V., Morris, Z., Murray, C., Royle, N.A., Starr, J.M., Deary, I.J. and Wardlaw, J.M. (2012). Neuroprotective lifestyles and the aging brain: Activity, atrophy, and white matter integrity. *Neurology, Volume 79, Issue 17, Pages 1802-1808*.
- Grau, A.J., Barth, C., Geletneky, B., Ling, P., Palm, F., Lichy, C., Becher, H. and Buggle, F. (2009). Association between recent sports activity, sports activity in young adulthood, and stroke. *Stroke; a Journal of Cerebral Circulation, Volume 40, Issue 2, Pages 426-431*.

- Grice, A. and Conaghan P.G. (2011). Current perceptions of the UK population regarding the frequency of sports injuries, their long term consequences, particularly osteoarthritis and current care pathways for their management. *British Journal of Sports Medicine, Volume 45*.
- Grieve, J. and Sherry, E. (2012). Community benefits of major sport facilities: The Darebin International Sports Centre. *Sport Management Review, Volume 15, Issue 2, Pages 218-229*.
- Griffin, N., Kim, J., So, Y. & Hsu, V. (2009). *Evaluation of the WebPlay Arts Education Program: Findings from the 2006-07 School Year*. CRESST Report 759.
- Griffiths, L.J., Dowda, M., Dezateux, C. and Pate, R. (2010). Associations between sport and screen-entertainment with mental health problems in 5-year-old children. *International Journal of Behavioral Nutrition and Physical Activity, Volume 7, Issue 30*.
- Grimmer, K., Trott, P., Jones, D., Louw, Q., Williams, J. and Holland, L. (1999). *Young people's participation in sports and recreational activities, and associated injury*. University of South Australia, and Sports Medicine Australia.
- Grodach, C. (2010). Art Spaces, Public Space, and the Link to Community Development. *Community Development Journal, Volume 45, Issue 4, Pages.474-493*.
- Grossi, E., Blessi, G T., Sacco, P L., Buscema, M. (2012). The interaction between culture, health and psychological wellbeing: Data mining from the Italian culture and wellbeing project. *Journal of Happiness Studies, Volume 13, Issue 1, Pages 129-148*.
- Guetzkow, J. (2002). *How the Arts Impact Communities: An Introduction to the Literature on Arts Impact Studies* (Working Paper No. 20). Taking the Measure of Culture Conference.
- Guyatt, G.H., Sackett, D.L., Sinclair, J.C., Hayward, R., Cook, D.J. & Cook, R.J. (1995). Users' guides to the medical literature. IX. A method for grading health care recommendations. Evidence-Based Medicine Working Group. *JAMA*.
- Häkkinen, A., Kukka, A., Onatsu, T., Järvenpää, S., Heinonen, A., Kyröläinen, H., Tomas-Carus, P. and Kallinen, M. (2009). Health-related quality of life and physical activity in persons at high risk for type 2 diabetes. *Disability and Rehabilitation, Volume 31, Issue 10, Pages 799-805*.
- Hallinan, C. and Judd, B. (2009) Race relations, Indigenous Australia and the social impact of professional Australian football. *Sport in Society, Volume 12, Issue 9, Pages 1220-1235*.
- Hamilton, C., Galloway, S., Langen, F., Cran, A., MacPherson, C., Burns, M & Snedden, E. (2008). *Evaluation report: Scotland's Year of Highland Culture 2007*. Centre for Cultural Policy Research,
- Hampshire & Matthijsse (2010)
- Hanson, C.S., Nabavi, D. and Yuen, H.K. (2001). The effect of sports on level of community integration as reported by persons with spinal cord injury. *American Journal of Occupational Therapy, Volume 55, Issue 3, Pages 332-338*.
- Hartmann, D. and Massoglia, M. (2007). Reassessing the Relationship between High School Sports Participation and Deviance: Evidence of Enduring, Bifurcated Effects. *The Sociological Quarterly, Volume 48, No. 3, Pages 485-505*.

Harvey, J., Levesque, M. and Donnelly, P. (2007). Sport Volunteerism and Social Capital. *Sociology of Sport, Volume 24, Issue 2, Pages 206-223.*

Haskell, W.L., Lee, I.M., Pate, R.R., Powell, K.E., Blair, S.N., Franklin, B.A., Macera, C.A., Heath, G.W., Thompson, P.D. and Bauman, A. (2007). Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Medicine and Science in Sports and Exercise, Volume 39, Issue 8, Pages 1423-1434.*

Haudenhuyse, R. P., Theeboom, M. and Coalter, F. (2012). The potential of sports-based social interventions for vulnerable youth: implications for sport coaches and youth workers. *Journal of Youth Studies, Volume 15, Issue 4, Pages 437-454.*

Hawkins, R. and Mulkey, L.M., (2005). Athletic Investment and Academic Resilience in a National Sample of African American Females and Males in the Middle Grades. *Education and Urban Society, Volume 38, Issue 1, Pages 62-88.*

Health and Human Services. (2007). *Preventing Diseases through Physical Activity. Legislator Policy Brief.* The Council of State Governments.

Heath, S.B., Soep, E. & Roach, A. (1998). Living the arts through language and learning: a report on community-based youth organisations. Carnegie Foundation for the Advancement of Teaching. Americans for the Arts. *Monographs, Volume 2, Issue 7, Pages 1-20*

Held, C., Iqbal, R., Lear, S.A., Rosengren, A., Islam, S., Mathew, J. and Yusuf, S. (2012). Physical activity levels, ownership of goods promoting sedentary behaviour and risk of myocardial infarction: results of the INTERHEART study. *European Heart Journal, Volume 33, Issue 4, Pages 452-466*

Hildebrandt, V.H., Bongers, P.M., Dul, J., van Dijk, F.J. and Kemper HC. (2000). The relationship between leisure time, physical activities and musculoskeletal symptoms and disability in worker populations. *International Archives of Occupational and Environmental Health, Volume 73, Issue 8, Pages 507-518.*

Hill Strategies Research Inc. (2008). *Arts Research Monitor*

Hill Strategies Research Inc. (2008). *Social Effects of Culture: Detailed Statistical Models.* Department of Canadian Heritage, Canada Council for the Arts, Ontario Arts Council

Hill Strategies Research Inc. (2010). *Artists in Small and Rural Municipalities in Canada.* Statistical insights on the arts.

Hill Strategies Research Inc. (2010). *Social Effects of Culture: Exploratory Statistical Evidence.*

Hodgson, M.H., McCulloch, H.P. and Fox, K.R. (2011). The experiences of people with severe and enduring mental illness engaged in a physical activity programme integrated into the mental health service. *Mental Health and Physical Activity, Volume 4, Issue 1, Pages 23-29*

Hoevenaer-Blom, M.P., Wendel-Vos, G.C., Spijkerman, A.M., Kromhout, D and Verschuren WM. (2011). Cycling and sports, but not walking, are associated with 10-year cardiovascular disease incidence: the MORGEN Study. *European Journal of Preventive Cardiology & Rehabilitation, Volume 18, Issue 1, Pages 41-47.*

- Holahan, C.K. and Suzuki, R. (2004). Adulthood predictors of health promoting behavior in later aging. *The International Journal of Aging and Human Development*. Volume 58, Issue 4, Pages 289-313.
- Holt, N. L., Tamminen, K. A., Tink, L. N. and Black, D. E. (2009). An interpretive analysis of life skills associated with sport participation. *Qualitative Research in Sport and Exercise*, Volume 1, Issue 2, Pages 160-175.
- Home Office. (2005). *Positive Futures Impact Report: Staying in touch*. Positive Futures.
- Hooper-Greenhill, E. & Dodd, J. (2002). *Seeing the Museum Through The Visitors' Eyes - The Evaluation of the Education Challenge Fund*. RCMG, University of Leicester.
- Houston, T.K., Meoni, L.A., Ford, D.E., Brancati, F.L., Cooper, L.A., Levine, D.M., Liang, K.Y. and Klag, M.J. (2002). Sports ability in young men and the incidence of cardiovascular disease. *The American Journal of Medicine*, Volume 112, Issue 9, Pages 689-695.
- Howie, L.D., Lukacs, S.L., Pastor, P.N., Reuben, C.A. and Mendola, P. (2010). Participation in Activities Outside of School Hours in Relation to Problem Behavior and Social Skills in Middle Childhood. *Journal of School Health*, Volume 80, Issue 3, Pages 199-125.
- Huang, H. and Humphreys, B.R. (2012). Sports participation and happiness: Evidence from US microdata. *Journal of Economic Psychology*, Volume 33, Issue 4. Pages 776-793.
- Hughes, J. (2006). *Doing the Arts Justice. A Review of Research Literature, Practice and Theory*. Unit for the Arts and Offenders [and] Centre for Applied Theatre Research. London: Arts Council England.
- Huhtala, A. (2004). What price recreation in Finland? – A contingent valuation study of non-market benefits of public outdoor recreation areas. *Journal of Leisure Research*, Volume 36, Issue 1, Pages 23-44.
- Hui, S. (2001). *Health and Physical Activity in Hong Kong - A Review*. Hong Kong Sports Development Board Research Report No. 4.
- Humphreys, B. R., Johnson, B. K., Mason, D. S. and Whitehead, J. C. (2011). *Estimating the value of medal success at the 2010 Winter Olympic Games*. University of Alberta, Faculty of Arts, Department of Economics Working Paper No. 2011-20.
- Hunter, M A. (2005). *Education and the Arts Research Overview*. Australia Council for the Arts.
- Hutinger, P.L. (1998). *The Expressive Arts Project*. A Final Report for the Project Period October 1, 1992 - November 30, 1997.
- Interarts Foundation. (2010). *Access of young people to culture*. Barcelona: Interarts.
- Ipsos MORI. (2009). *Parents' Views on Creative and Cultural Education*. Creativity, Culture and Education.
- Jamieson, L.M. and Ross, C.M. (2007). Research Update: Using Recreation to Curb Extremism: Sports and Recreation Have Been Proven to Be Effective Means of Addressing Peace Building in the Middle East. *Parks and Recreation*, Volume 42, Issue 2, Pages 26-29.

- Jeannotte, M.S. (2003). Singing alone? The contribution of cultural capital to social cohesion and sustainable communities. *International Journal of Cultural Policy*, Volume 9, Issue 1, Pages 35-49.
- Jedrziwski, M.K., Ewbank, D.C., Wang, H. and Trojanowski, J.Q. (2010). Exercise and cognition: results from the National Long Term Care Survey. *Alzheimer's and Dementia*, Volume 6, Issue 6, Pages 448-455.
- Jenkins, C. and Ellis, T. (2011). The highway to hooliganism? An evaluation of the impact of combat sport participation on individual criminality. *International Journal of Police Science & Management*, Volume 13, Issue 2, Pages 117-131.
- Jensen, E. (2010). *Something Different: A pilot study evaluating family outreach activities at the Fitzwilliam Museum*.
- Jiang, X. and Peterson, R. (2012). Beyond Participation: The Association Between School Extracurricular Activities and Involvement in Violence Across Generations of Immigration. *Journal of Youth and Adolescence*, Volume 41, Issue 3, Pages 362-378.
- Johnson, G., Pfrommer, P., Stewart, S., Glinkowski, P., Fenn, C., Skelton, A. & Joy, A. (2004). *New audiences for the arts The New Audiences Programme 1998-2003*. London: Arts Council England.
- Johnson, H., Keen, S., Pritchard, D. (2011). *Unlocking value. The economic benefit of the arts in criminal justice*. New Philanthropy Capital.
- Jurak, G. (2006). Sporting lifestyle vs. 'cigarettes & coffee' lifestyle of Slovenian high school students. *Anthropological Notebooks*, Volume 12, Issue 2, Pages 79-95.
- Kahn, L. and Norman, W. (2012). *Move It: Increasing young people's participation in sport*. The Young Foundation, London.
- Kanevsky, L., Corke, M., Frangkiser, L. (2008). The Academic Resilience and Psychosocial Characteristics of Inner-City English Learners Participating in a Museum-Based School Program. *Education and Urban Society*, Volume 40, Issue 4, Pages 452-475.
- Katzmarzyk, P.T., Gledhill, N. and Shephard, R.J. (2008). The economic burden of physical inactivity in Canada. *Canadian Medical Association Journal*, Volume 163, Issue 1, Pages 1435-1440.
- Kaufman, Z.A., Welsch, R.L., Erickson, J.D., Craig, S. Adams, L.V. and Ross, D.A. (2012). Effectiveness of a sports-based HIV prevention intervention in the Dominican Republic: a quasi-experimental study. *AIDS Care*, Volume 24, Issue 3, Pages 377-385.
- Kavetsos, G. (2011). Physical activity and subjective wellbeing: an empirical analysis in Rodriguez, P., Kesenne, S. and Humphreys B.R. *The Economics of Sport, Health and Happiness: The promotion of wellbeing through sporting activities*. Edward Elgar Publishing Limited. Pages 213-222.
- Kay, T. (2009). Developing through sport: evidencing sport impacts on young people. *Sport in Society: Cultures, Commerce, Media, Politics*, Volume 12, Issue 9, Pages 1177-1191.

- Kay, T. and Bradbury, S. (2009). Youth sport volunteering: developing social capital? *Sport, Education and Society*, Volume 14, Issue 1, Pages 121-140.
- KEA. (2009). *The Impact of Culture on Creativity*. European Commission (Directorate-General for Education and Culture).
- Keaney, E. (2006). *From access to participation: cultural policy and civil renewal*. London: Institute for Public Policy Research.
- Keogh, J.W., Kilding, A., Pidgeon, P., Ashley, L. and Gillis, D. (2009). Physical benefits of dancing for healthy older adults: a review. *Journal of Aging & Physical Activity*, Volume 17, Issue 4, Pages 479-500.
- Kilroy, A., Garner, C., Parkinson, C., Kagan, C., & Senior, P. (2007). *Towards transformation: exploring the impact of culture, creativity and the arts on health and wellbeing*. A consultation report for the critical friends event. Arts for Health, Manchester Metropolitan University.
- Kim, Y.S., Park, Y.S., Allegrante, J.P., Marks, R., Ok, H., Ok Cho, K. and Garber, C.E. (2012). Relationship between Physical Activity and General Mental Health. *Preventive Medicine*, Volume 55, Issue 5. Pages 458-463.
- Kim, Y-S. and So, W-Y. (2012). The relationship between school performance and the number of physical education classes attended by Korean adolescent students. *Journal of Sports Science and Medicine*, Volume 11, Pages 226-230.
- Kinder, K., & Harland, J. (2004). The Arts and Social Inclusion: What's the Evidence? *Support for Learning*, Volume 19, Issue 2, Pages 52-56.
- Klentrou, P., Hay, J. and Plyley, M. (2003). Habitual physical activity levels and health outcomes of Ontario youth. *European Journal of Applied Physiology*, Volume 89, Issue 5, Pages 460-465.
- Kline, K.A. (1997). *The relationship between academic achievement and athletic participation of female and male athletes at the NCAA Division III level*. The University of Connecticut.
- Kopczynski, M. & Hager, M. (2003). *The Value of the Performing Arts in Five Communities*. Performing Arts Research Coalition.
- Kouvonen, A., Swift, J A., Stafford, M., Cox, T., Vahtera, J., Väänänen, A., Heponiemi, T., De Vogli, R., Griffiths, A. & Kivimäki, M. (2012). Social participation and maintaining recommended waist circumference: Prospective evidence from the English Longitudinal Study of Aging. *Journal of Aging Health*. Volume 24, Issue 2, Pages 250-68.
- Lahti, J., Lahelma, E. and Rahkonen, O. (2012). Changes in leisure-time physical activity and subsequent sickness absence: a prospective cohort study among middle-aged employees. *Preventive Medicine*, Volume 55, Issue 6, Pages 619-622.
- Landow, R.W. (1997). *Type of sport played and motivation orientation as predictors of subjective wellbeing in college athletes*. ProQuest Dissertations and Theses.
- Langbein, L. and Bess, R. (2002). Sports in School: Source of Amity or Antipathy? *Social Science Quarterly*, Volume 83, Issue 2, Pages 436-454.

- Le Roux, B., Rouanet, H., Savage, M., Warde, A. (2007). Class and Cultural Division in the UK. *Sociology, Volume 42, Issue 6*, Pages 1049–1071.
- Lechner, M. (2008). Long-Run Labour Market Effects of Individual Sports Activities *Journal of Health Economics, Volume 28, Issue 4*, Pages 839-854.
- Lee, A.H., Su, D., Pasaich, M., Wong, Y.L. and Binns, C.W. (2012). Habitual physical activity reduces risk of ovarian cancer: A case-control study in southern China. *Preventive Medicine*, In Press.
- Lee, I. and Skerrett, P.J. (2001). Physical activity and all-cause mortality: what is the dose-response relation? *Medicine & Science in Sports & Exercise, Volume 33, Issue 6*, Pages 459-471.
- Lees, L. & Melhuish, C. (2013). *Arts-led regeneration in the UK: The rhetoric and the evidence on urban social inclusion*. European Urban and Regional Studies.
- Leime, A.N. and O'Shea, E. (2010). *Well into Older Age - Age and Opportunity and the Evidence: What research says about the value of promoting participation of older people*. Age and Opportunity.
- Leitzmann, M.F., Moore, S.C., Peters, T.M., Lacey, J.V.Jr., Schatzkin, A., Schairer, C., Brinton, L.A. and Albanes, D. (2008). Prospective study of physical activity and risk of postmenopausal breast cancer. *Breast Cancer Research, Volume 10, Issue 5*.
- Leonard, M. (2010). Exhibiting Popular Music: Museum Audiences, Inclusion and Social History. *Journal of New Music Research, Volume 39, Issue 2*, Pages 171-181.
- LeRoux, K. (2012). *Interest in Arts Predicts Social Responsibility*. University of Illinois at Chicago.
- Lin, M.R., Hwang, H.F., Wang, Y.W., Chang, S.H. and Wolf, S.L. (2006). Community-based tai chi and its effect on injurious falls, balance, gait, and fear of falling in older people. *Physical Therapy, Volume 86, Issue 9*, Pages 1189-1201.
- Lipscomb, S. (2007). Secondary School Extracurricular Involvement and Academic Achievement: A Fixed Effects Approach. *Economics of Education Review, Volume 26, Issue 4*, Pages 463-472.
- Lockyer-Benzie, M. (2004). Social inclusion and the City of Swan public libraries in Western Australia. *Health Information and Libraries Journal, Supplement 2*, Pages 36-44.
- Long, J., Welch, M., Bramham, P., Butterfield, J., Hylton, K. & Lloyd, E. (2002). Count Me In: The Dimensions of Social Inclusion through Culture, Media & Sport. Department for Culture, Media & Sport.
- Lullo, C. and Van Puymbroeck, M. (2006) Research update: sports for children with ADHD. *Parks and Recreation, Volume 41, Issue 12*, Pages 20-24.
- Lyons, S., Corneille, D., Coker, P. and Ellis, C. (2009). A Miracle in the Outfield: The Benefits of Participation in Organized Baseball Leagues for Children with Mental and Physical Disabilities. *Therapeutic Recreation Journal, Volume 43, Issue 3*, Pages 41-48.
- Lyras, A. (2007). *Characteristics and psycho-social impacts of an inter-ethnic educational sport initiative on Greek and Turkish Cypriot youth*. University of Connecticut.

- Mackin, R. S. and Walther, C. S. (2011). Race, sport and social mobility: Horatio Alger in short pants? *International Review of Sociology of Sport*, Volume 47, Issue 6, Pages 670-689.
- Macmillan Cancer Support. (2011). *Move More: Physical Activity the underrated 'wonder drug'*.
- Maeer, G., Fawcett, G. and Gillick, T. (2012) *Values and Benefits of Heritage: a research review*. Heritage Lottery Fund, London.
- Maffulli, N., Longo, U.G., Gougoulas, N., Caine, D. and Denaro, V. (2011). Sport injuries: a review of outcomes. *British Medical Bulletin*, Volume 97, Issue 1, Pages 47-80.
- Malebo, A. (2007). Sport participation, psychological wellbeing, and psychosocial development in a group of young black adults. *South African Journal of Psychology*, Volume 37, Issue 1, Pages 188-223.
- Marsh, K., MacKay, S., Morton, D., Parry, W., Bertranou, E. & Sarmah, R. (2010). *Understanding the drivers of engagement in culture and sport: technical report*. CASE.
- Marsh, H.W. and Kleitman, S. (2003). School Athletic Participation: Mostly Gain With Little Pain. *Journal of Sport and Exercise Psychology*, Volume 25, Issue 2, Pages 205-228.
- Marsh, K., MacKay, S., Morton, D., Parry, W., Bertranou, E., Lewsie, J., Sarmah, R. and Dolan, P. (2010). *Understanding the value of engagement in culture and sport: Summary Report*. DCMS.
- Martin, A. & Bartlett, H. (2003). *Implementing the national policy for theatre in England: baseline findings*. Arts Council England.
- Martin, K. (2010). *Brain boost: Sport and physical activity enhance children's learning*. School of Population Health, The University of Western Australia.
- Marvul, J.N. (2012). If You Build It, They Will Come A Successful Truancy Intervention Program in a Small High School. *Urban Education*, Volume 47, Issue 1, Pages 144-169.
- Mason, O.J. and Holt, R. (2012). Mental health and physical activity interventions: A review of the qualitative literature. *Journal of Mental Health*, Volume 31, Issue 3, Pages 274-284.
- Matarasso, F. (1997). *Use or Ornament? The social impact of participation in the arts*. Comedia.
- Maughan, C. & Bianchini, F. (2004). *The economic and social impact of cultural festivals in the East Midlands of England. Final report*. London: Arts Council England.
- McCall, V. (2009). Social policy and cultural services: a study of Scottish Border Museums as implementers of social inclusion. *Social Policy and Society*, Volume 8, Issue 3, Pages 319-331.
- McClure, C.R., Fraser, B.T., Nelson, T.W. & Robbins, J.B. (2001) *Economic benefits and impacts from public libraries in the state of Florida*. Florida State University, Tallahassee, FL
- McDonald, H. (2011). Understanding the antecedents to public interest and engagement with heritage. *European Journal of Marketing*, Volume 45, Issue 5, Pages. 780-804.
- Mcintyre, S., MacDonald, L. & Ellaway, A. (2008). Do poorer people have poorer access to local resources and facilities? The distribution of local resources by area deprivation in Glasgow, Scotland. *Social Science and Medicine*, Volume 67, Issue 6, Pages 900-914.

- McKenney, A. and Dattilo, J. (2001). Effects of an Intervention Within a Sport Context on the Pro-social Behavior and Anti-social Behavior of Adolescents with Disruptive Behavior Disorders. *Therapeutic Recreation Journal, Volume 35, Issue 2, Pages 123-140.*
- McLendon, C., Nettles, S.M. and Wigfield, A. (2000). Fostering resilience in high school classrooms: A study of the PASS program (Promoting Achievement in School Through Sport). In M.G. Sanders (Ed.), *Schooling students placed at risk: Research, policy, and practice in the education of poor and minority adolescents.* Lawrence Erlbaum. Pages 289-307.
- McPherson, S., Bird, M., Anderson, K., Davis, T. & Blair, A. (2009). An Art Gallery Access Programme for people with dementia: 'You do it for the moment.' *Aging and Mental Health, Volume 13, Issue 5, Pages 744-52.*
- Metzger, A., Cream, H.F. and Forbes-Jones, E.L. (2009). Patterns of Organized Activity Participation in Urban, Early Adolescents: Associations With Academic Achievement, Problem Behaviors, and Perceived Adult Support. *Journal of Early Adolescence, Volume 29, Issue 3, Pages 426-442.*
- Michalos, A.C. & Kahlke, P.M. (2008). Impact of Arts-Related Activities on the Perceived Quality of Life. *Social Indicators Research, Volume 89, Issue 2, Pages 193-258.*
- Michalos, A.C. & Kahlke, P.M. (2010). Arts and the Perceived Quality of Life in British Columbia. *Social Indicators Research, Volume 96, Issue 1, Pages 1-39.*
- Miller, K.E., Sabo, D.F., Melnick, M.J., Farrell, M.P. and Barnes, G.M. (2000). *The Women's Sports Foundation Report: Health Risks and the Teen Athlete.* East Meadow, NY: Women's Sports Foundation.
- Milligan, F. (2012). Cardiac rehabilitation: an effective secondary prevention intervention. *British Journal of Nursing, Volume 21, Issue 13, Pages 782-785.*
- Mirchandani, S. & Norgrove, K. (2009). *Collecting Cultures Programme Evaluation Year One 2009.* Heritage Lottery Fund.
- Miringoff, M-L. & Opdycke, S. (2005). Arts, Culture and the Social Health of the Nation 2005. *GIA Reader, Volume 17, Issue 2.*
- Moesch, K., Birrer, D. and Seiler, R. (2010). Differences between violent and non-violent adolescents in terms of sport background and sport-related psychological variables. *European Journal of Sport Science, Volume 10, Issue 5, Pages 319-328.*
- Moody, E. & Phinney, A. (2012) A community-engaged art program for older people: fostering social inclusion. *Canadian Journal on Aging, Volume 31, Issue 1, Pages 55-64.*
- Moore, S.C., Patel, A.V., Matthews, C.E., Berrington de Gonzalez, A., Park, Y., Katki, H.A., Linet, M.S., Weiderpass, E., Visvanathan, K., Helzlsouer, K.J., Thun, M., Gapstur, S.M., Hartge, P. and Lee, I.M. (2012) Leisure Time Physical Activity of Moderate to Vigorous Intensity and Mortality: A Large Pooled Cohort Analysis. *PLOS Medicine, Volume 9, Issue 11.*
- MORI. (2005). *Being Young in Scotland 2005: Young People's Participation in Youth Work, Arts, Culture and Sport.* Market & Opinion Research International

- Morris Hargreaves McIntyre. (2002). *Developing new audiences and promoting social inclusion*. National Museums and Galleries of Wales.
- Morris Hargreaves McIntyre. (2010). *Start with the Child: The Needs and Motivations of Young People*. Resource & The Chartered Institute of Library and Information Professionals
- Morris, L., Sallybanks, J. and Willis, K. (2003). *Sport, Physical Activity and Anti-social Behaviour in Youth*. Australian Institute of Criminology Research and Public Policy Series No. 49.
- Morris, P. and Kalil, A. (2004). *Out-of-School Time-Use During Middle Childhood in a Low-Income Sample: Do Combinations of Activities Affect Achievement and Behaviour?* The Self-Sufficiency Project. SRDC Working Paper Series 04-06. Social Research and Demonstration Corporation.
- Mulholland, E. (2008). *What Sport Can Do: The True Sport Report*. The Canadian Centre for Ethics in Sport.
- Muller, P., Wadsley, A., Adams, D., Arthur, D. and Felmingham, B. (2010). *The Value of Sport and Physical Recreation to Tasmania*. Australian Innovation Research Centre, University of Tasmania, Australia.
- Murray, S. (2010). Statistical Report - Renaissance Q1, April - June 2010. MLA.
- Murray, S. (2010). Statistical Report - Renaissance: Q3, Q4 & Annual 2009/10. MLA.
- Murray, S. (2010). Statistical Report - Renaissance: Quarter 2, July - September 2009. MLA.
- Nakagawa, S. (2010). Socially inclusive cultural policy and arts-based urban community regeneration. *Cities, Volume 27, Supplement 1*, Pages 16–24.
- National Audit Office (2009). *Promoting Participation with the Historic Environment*. NAO, London.
- National Economic and Social Forum. (2007). *The arts, social inclusion and social cohesion*. NESF Report 35.
- National Endowment for the Arts (2004) *The arts and civic engagement: involved in arts, involved in life*. Washington: National Endowment for the Arts.
- National Endowment for the Arts. (2009). *Art-goers in their communities: patterns of civic and social engagement*. Washington: National Endowment for the Arts
- National Endowment for the Arts. (2010). *How technology influences arts participation*. Washington: National Endowment for the Arts
- National Governors' Association. (2002). *Impact of Arts Education on Workforce Preparation*.
- National Institute of Adult Continuing Education. (2009). " *There's Light at the End of the Tunnel*".
- National Statistics. (2009). *People and culture in Scotland*. Results from the Scottish Household Survey Culture and Sport Module 2007/2008.
- Nelson, M.C. and Gordon-Larsen, P. (2006). Physical Activity and Sedentary Behavior Patterns Are Associated With Selected Adolescent Health Risk Behaviors. *Journal of the American Academy of Pediatrics, Volume 117, Issue 4*, Pages 1281-1290.

Nevill, C. and Poortvliet, M.V. (2011). *Teenage Kicks: The Value of Sport in Tackling Youth Crime*. New Philanthropy Capital.

Newman, M., Bird, K., Tripney, J., Kalra, N., Kwan, I., Bangpan, M. and Vigurs, C. (2010). *Understanding the impact of engagement in culture and sport, a systematic review of the learning impacts for young people*. CASE, DCMS, London.

Nicholson, L. (2004). *Older People, Sport and Physical Activity: A Review of Key Issues*. Research Digest no. 99. Sportscotland, Edinburgh.

Nieman, D.C., Henson, D.A., Austin, M.D. and Sha, W. (2011). Upper respiratory tract infection is reduced in physically fit and active adults. *British Journal of Sports Medicine, Volume 45, Issue 12*, Pages 987-992.

Novak-Leonard, J.L. & Brown, A.S. (2011). *Beyond Attendance: A Multi-Modal Understanding of Arts Participation*. Based on the 2008 Survey of Public Participation in the Arts. Research Report #54.

Oakley, K. (2004). *Developing the evidence base for support of cultural and creative activities in South East England*. South East England Cultural Consortium.

O'Connor, S. and Jose, P.E. (2012). A propensity score matching study of participation in community activities: a path to positive outcomes for youth in New Zealand? *Developmental Psychology, Volume 48, Issue 6*, Pages 1563-1569.

Ogrodnik, L. (2000). *Patterns in Cultural Consumption and Participation*. Statistics Canada, Culture Statistics Program.

Otterbourg, S. (2002). *How the Arts Can Enhance After-School Programs*. The U.S. Department of Education and the National Endowment for the Arts.

Oughton, C. and Tacon, R. (2007). *Sport's contribution to achieving wider social benefits*. A Report for the Department of Culture Media and Sport.

Özer, D., Baran, F., Aktop, A., Nalbant, S., Ağlamış, E. and Hutzler, Y. (2012). Effects of a Special Olympics Unified Sports soccer program on psycho-social attributes of youth with and without intellectual disability. *Research in Developmental Disabilities, Volume 33, Issue 1*, Pages 229-239.

Parbery-Clarke, A., Anderson, S., Hittner, E. & Krauss, N. (2012) Musical experience offsets age-related delays in neural timing. *Neurobiology of Aging, Volume 33, Issue 7*, p1483.

Parsons, J.K., Messer, K., White, M., Barrett-Connor, E., Bauer, D.C. and Marshall, L.M. (2011). Obesity increases and physical activity decreases lower urinary tract symptom risk in older men: the Osteoporotic Fractures in Men study. *European Urology, Volume 60, Issue 6*, Pages 1173-1180.

Paterson, D.H., Jones, G.R. and Rice, C.L. (2007). Ageing and physical activity: evidence to develop exercise recommendations for older adults. *Applied Physiology Nutrition and Metabolism, Volume 32, Supplement 2*, Pages 69-108.

- Pawlowski, T., Breuer, C. and Leyva, J. (2011). Sport opportunities and local wellbeing: is sport a local amenity? in Rodriguez, P., Kesenne, S. and Humphreys B.R. *The Economics of Sport, Health and Happiness: The promotion of wellbeing through sporting activities*. Edward Elgar Publishing Limited. Pages 223-244.
- Payne, L.L., Mowen, A.J. and Montoro-Rodriguez, J. (2006). The Role of Leisure Style in Maintaining the Health of Older Adults with Arthritis. *Journal of Leisure Research, Volume 38, Issue 1*, Pages 20-45.
- Peacock-Villada, P., DeCelles, J. and Banda, P.S. (2007). Grassroot Soccer resiliency pilot program: building resiliency through sport-based education in Zambia and South Africa. *New Directions for Youth Development, No. 116*, Pages 141-154.
- Pekka, O. (2001). Dose response between total volume of physical activity and health and fitness. *Medicine & Science in Sports & Exercise, Volume 33, Issue 6*, Pages 428-437.
- Pendlebury, J.R., Townshend, T. & Gilroy, R.C. (2004). The conservation of English cultural built heritage: a force for social inclusion? *International Journal of Heritage Studies, Volume 10, Issue 1*, Pages 11-31.
- Perks, T. (2007). Does Sport Foster Social Capital? The Contribution of Sport to a Lifestyle of Community Participation. *Sociology of Sport, Volume 24, Issue 4*, Pages 378-401.
- Peters, T.M., Schatzkin, A., Gierach, G.L., Moore, S.C., Lacey, J.V.Jr., Wareham, N.J., Ekelund, U., Hollenbeck, A.R. and Leitzmann, M.F. (2009). Physical activity and postmenopausal breast cancer risk in the NIH-AARP diet and health study. *Cancer Epidemiology, Biomarkers & Prevention, Volume 18, Issue 1*, Pages 289-296.
- Pirrie, A. M. and Lodewyk, K. R. (2012). Investigating links between moderate-to-vigorous physical activity and cognitive performance in elementary school students. *Mental Health and Physical Activity. Volume 5*, 93-98
- Piscitelli, B. (2004). *Education, enculturation and the arts: fuelling an innovation culture*. Education and the Arts Partnership Initiative Queensland.
- Pontifex, M.B., Saliba, B.J., Raine, L.B., Picchietti, D.L. and Hillman, C.H. (2012). Exercise Improves Behavioral, Neurocognitive, and Scholastic Performance in Children with Attention-Deficit/Hyperactivity Disorder. *The Journal of Pediatrics*, In Press.
- Popkin, B.M., Kim, S., Rusev, E.R., Du, S. and Zizza, C. (2006). Measuring the full economic costs of diet, physical activity and obesity-related chronic diseases. *Obesity Reviews, Volume 7, Issue 3*, Pages 271-293.
- Porter, K., Cuban, S. & Comings, J P. (2005). "One Day I Will Make It": A Study of Adult Student Persistence in Library Literacy Programs. MDRC.
- Pratt, M., Macera, C.A. and Wang, G. (2000). Higher direct medical costs associated with physical inactivity. *The Physician and Sports Medicine. Volume 28, Issue 10*, Pages 63-70.
- President's Committee on the Arts and Humanities. (2011). *Reinvesting in Arts Education: Winning America's Future Through Creative Schools*.

PricewaterhouseCoopers. (2008). *Social and Economic Value of Public Libraries, Museums, Arts and Sport in Northern Ireland Phase I: Designing a Model*.

PROS Consulting LLC. (2012). *Economic and Fiscal Impact Analysis: Executive Summary*. Friends of Westchester County Parks.

Quinn, B. (2005). Arts festivals and the city. *Urban Studies, Volume 42, Issue 5/6*, Pages 927–943.

Rabaglietti, E., Roggero, A., Begotti, T., Borca, G. & Ciairano, S. (2012). Family functioning's contributions to values and group participation in Italian late adolescents: A longitudinal study. *Journal of Prevention & Intervention in the Community, Volume 40, Issue 1*, Pages 37-48.

Rahim, N. & Mavra, L. (2009). Barriers to Engagement in Heritage by Currently Under-Represented Groups.

Ramsden, H., Milling, J., Phillimore, J., McCabe, A., Fyfe, H., & Simpson, R. (2011). *The Role of Grassroots Arts Activities in Communities: A Scoping Study*. (Working Paper 68).

Randi Korn & Associates. (2007). *Teaching literacy through art*. Final report: synthesis of 2004-05 and 2005-06 studies.

Rasciute, S. and Downward, P.M. (2010). Health or Happiness? What is the Impact of Physical Activity on the Individual? *Kyklos, Volume 63, Issue 2*, Pages 256-270.

Rees, D.I. and Sabia, J.J. (2010). Sports participation and academic performance: Evidence from the National Longitudinal Study of Adolescent Health. *Economics of Education Review, Volume 29, Issue 5*, Pages 751-759.

Reeves, M. (2002). *Measuring the Economic and Social Impact of the Arts: A review*. London: Arts Council England.

Regional Arts Australia. (2010). *Creating a Better Life for Regional Australians*. Regional Arts Australia

Reid, C., Dyck, L., McKay, H. and Frisby, W. (2000). *The Health Benefits of Physical Activity for Girls and Women: Literature Review and Recommendations for Future Research and Policy*. British Columbia Centre of Excellence for Women's Health. Vancouver, BC.

Renton, Phillips, Daykin, Yua, Taylor & Petticrew (2012)

Rhea, D.J. and Lantz, C.D. (2004). Violent, Delinquent, and Aggressive Behaviors of Rural High School Athletes and Non-Athletes. *Physical Educator, Volume 61, Issue 4*, Pages 170-176

Rizzuto, D., Orsini, N., Chengxuan, Qiu., Hui-Xin, W. and Fratiglioni, L. (2012). Lifestyle, social factors, and survival after age 75: population based study. *British Medical Journal, Volume 345, Issue 7876*, Pages 17-27.

Rodriguez, R., Kesenne, S. and Humphreys, B.R. (2011). *The Economics of Sport, Health and Happiness: The promotion of wellbeing through sporting activities*. New Horizons in the Economics of Sport. Edward Elgar Publishing Limited, Cheltenham.

- Rolandsson, M. and Hugoson, A. (2003). Changes in tobacco habits. A prospective longitudinal study of tobacco habits among boys who play ice hockey. *Swedish Dental Journal*, Volume 27, Issue 4, Pages 175-184.
- Rosenstein, C. (2010). *Live from your neighbourhood – a national study of outdoor festivals*. (Research Report 51, Volume Two: Seven Case Studies). National Endowment of the Arts
- Roux, L., Pratt, M., Tengs, T.O., Yore, M.M., Yanagawa, T.L., Van Den Bos, J., Rutt, C., Brownson, R.C., Powell, K.E., Heath, G., Kohl, H.W., Teutsch, S., Cawley, J., Lee, I.M., West, L. and Buchner, D.M. (2008). Cost effectiveness of community-based physical activity interventions. *American Journal of Preventive Medicine*, Volume 35, Issue 6, Pages 578-588.
- Ruiz, J. (2004). *A literature review of the evidence base for Culture, The Arts and Sport Policy*. Social Research, Research and Economic Unit, Scottish Executive Education Department.
- Runnalls, K. (2007). *Choreographing community sustainability: The importance of cultural planning to community viability*. The Centre of Expertise on Culture and Communities.
- Rutten, E.A., Stams, G.J.M., Biesta, G.J.J., Schuengel, C., Dirks, E. and Hoeksma, J.B. (2007). Contribution of Organized Youth Sport to Anti-social and Pro-social Behavior in Adolescent Athletes. *Journal of Youth and Adolescence*, Volume 36, Issue 3, Pages 255-264.
- Sabo, D., Miller, K. E., Mellnick, M. J. and Heywood, L. (2004) *Her life depends on it: sport, physical activity and the health and wellbeing of American girls*. Women's Sport Foundation, New York.
- Sackett, D.L., Rosenberg, W.M., Gray, J.A., Haynes, R.B. & Richardson, W.S. (1996). Evidence based medicine: what it is and what it isn't. *BMJ*, 312, 71-72
- Sagar, S.S., Boardley, I.D. and Kavussanu, M. (2011). Fear of failure and student athletes' interpersonal anti-social behaviour in education and sport. *British Journal of Educational Psychology*, Volume 81, Issue 3, Pages 391-408.
- Sandford, R.A., Armour, K.M. and Warmington, P.C. (2006). Re-engaging Disaffected Youth through Physical Activity Programmes. *British Educational Research Journal*, Volume 32, Issue 2, Pages 251-271.
- Sandford, R.A., Duncombe, R. and Armour, K.M. (2008). The role of physical activity/sport in tackling youth disaffection and anti-social behaviour. *Educational Review*, Volume 60, Issue 4, Pages 419-435.
- Schellenberg, E. G. (2006). Long-Term Positive Associations Between Music Lessons and IQ. *Journal of Education Psychology*, Volume 98, Issue 2, Pages 457-468.
- Schmidt, A., Jung, J., Ernstmann, N., Driller, E., Neumann, M., Staratschek-Jox, A., Schneider, C., Wolf, J. and Pfaff, H. (2012). The association between active participation in a sports club, physical activity and social network on the development of lung cancer in smokers: a case-control study. *BMC Research Notes*, Volume 5, Issue 1, Pages 2-10.
- Schnohr, P., Kristensen, T.S., Prescott, E. and Scharling, H. (2005). Stress and life dissatisfaction are inversely associated with jogging and other types of physical activity in leisure time: The Copenhagen City Heart Study. *Scandinavian Journal of Medicine and Science in Sports*, Volume 15, Issue 2, Pages 107-112.

Schulenkorf, N. and Edwards, D. (2012). Maximising positive social impacts: strategies for sustaining and leveraging the benefits of intercommunity sports events in divided societies. *Journal of Sport Management*, Volume 26, Pages 379-390.

Schwarzenegger, A., Chrisman, M. and Coleman, R. (2005). *The health and social benefits of recreation*. California Outdoor Recreation Planning Program. California State Parks, California.

Scottish Arts Council. (2008). Taking Part in Scotland 2008: Full report of survey findings. Scottish Arts Council.

Secker, J., Hacking, S., Sandler, H., Kent, L., & Shenton, J. (2007). *Mental health, social inclusion and arts: developing the evidence base*. Anglia Ruskin University/Department of Health.

Seefeldt, V.D. and Ewing, M.E. (1997). *Youth Sports in America: An Overview*. President's Council on Physical Fitness and Sports Research Digest, Series 2, Number 11.

Self, A., Thomas, J. and Randall, C. (2012). *Measuring National Wellbeing: Life in the UK, 2012*. Office for National Statistics. Accessed 15/02/2013.

Sherry, E. and Strybosch, V. (2012). A kick in the right direction: longitudinal outcomes of the Australian Community Street Soccer Program. *Soccer & Society*, Volume 13, Issue 4, Pages 495-509.

Simon Jaquet Consultancy Services Ltd. (2009). Cornerstones of Communities: Museums Transforming Society. Retrieved from Museum Galleries Scotland Website: <http://www.museumgalleriescotland.org.uk/what-we-do/research-and-evaluation/completed-mgs-research-and-evaluations/>

Solomon, N.M. (2002). *Girls' Participation in Sports: An Important Tool in Teen Pregnancy Prevention*. Policy Brief. California Women's Law Center, Los Angeles.

Southall, R.M., Nagel, M., Exton, C.S., Eckard, W. and Blake, C. (2013). *Adjusted Graduation Gap: NCAA Division 1 Men's and Women's Basketball*. College Sport Research Institute.

Sowa, M. and Meulenbroek, R. (2012). Effects of physical exercise on Autism Spectrum Disorders: A meta-analysis. *Research in Autism Spectrum Disorders*, Volume 6, Issue 1, Pages 46-57.

Spaaij, R. (2012a). Building social and cultural capital among young people in disadvantaged communities: lessons from a Brazilian sport-based intervention program. *Sport, Education and Society*, Volume 17, Issue 1, Pages 77-95.

Spaaij, R. (2012b). Beyond the playing field: experiences of sport, social capital, and integration among Somalis in Australia. *Ethnic and Racial Studies*, Volume 35, Issue 9, Pages 1519-1538.

Spence, J.C., Shephard, R.J., Craig, C. and McGannon, K. (2001). *Compilation of Evidence of Effective Active Living Interventions: A Case Study Approach*. Canadian Consortium of Health Promotion Research.

Sport England. (2002). *Positive futures: a review of impact and good practice; summary report*.

Sport England. (2008a). *Transforming lives: Improving the life chances and focussing the energies of children and young people through sport*.

Sport England. (2008b). *Building communities: Developing strong, sustainable and cohesive communities through sport*.

Sport England. (2008c). *Creating safer communities: Reducing anti-social behaviour and the fear of crime through sport*.

Sprouse, J.K.S., Klitzing, S.W. and Parr, M. (2005). Youth at Risk: Recreation and Prevention. *Parks and Recreation, Volume 40, Issue 1, Pages 16-21*.

Stanley, D. (2006). Recondita armonia: a reflection on the function of culture in building citizenship capacity. *Policy Note, Vol 10*. Council of Europe, Strasbourg.

Staricoff, R.L. (2004) *Arts in Health: a review of the medical literature*. Research Report 36. Arts Council for England, London.

Stern, M. J., & Seifert, S. C. (2008). From Creative Economy to Creative Society. Creativity & Change. The Reinvestment Fund.

Stern, M. J., & Seifert, S. C. (2010). Cultural clusters: The implications of cultural assets agglomeration for neighborhood revitalization. *The Journal of Planning Education and Research, Volume 29, Issue 3, Pages 262-279*.

Stevenson, R., & Biggs, H. (2010). *Survivarts Evaluation*. Scottish Development Centre for Mental Health. The Gold.

Streadfield, D., Bryson, J., & Usherwood, B. (2002). *Social Impact Study for Museums, Libraries and Archives*. Social Impact Audit. Centre for Public Libraries and Information in Society, Department of Information Studies, University of Sheffield.

Streb, A.G. (2009). *A study of the association between high school student participation in co-curricular activities and academic achievement*. ProQuest Dissertations and Theses.

Street, G. and James, R. (2007). *The Relationship between Organized Recreational Activity and Mental Health*. Centre for Behavioural Research in Cancer Control, Curtin University.

Sun, Q., Townsend, M.K., Okereke, O.I., Franco, O.H., Hu, F.B. and Grodstein, F. (2010). Physical activity at midlife in relation to successful survival in women at age 70 years or older. *Archives of Internal Medicine, Volume 170, Issue 2, Pages 194-201*.

Tak, E., Kuiper, R., Chorus, A. and Hopman-Rock, M. (2013). Prevention of onset and progression of basic ADL disability by physical activity in community dwelling older adults: A meta-analysis. *Ageing Research Reviews, Volume 12, Issue 1, Pages 329-338*.

Taliaferro, L.A., Eisenberg, M.E., Johnson, K.E., Nelson, T.F. and Neumark-Sztainer, D. (2011). Sport participation during adolescence and suicide ideation and attempts. *International Journal of Adolescent Medicine and Health, Volume 23, Issue 1, Pages 3-10*.

Taliaferro, L.A., Rienzo, B.A. and Donovan, K.A. (2010). Relationships between youth sport participation and selected health risk behaviors from 1999 to (2007). *Journal of School Health, Volume 80, Issue 8, Pages 399-410*.

Tarr, K. (2008). Enhancing environmental awareness through the arts. *Australian Journal of Early Childhood, Volume 33, Issue 3, Pages 19-26*.

Taylor, G. (2008). *Magnetizing Neighborhoods through amateur arts performance*. Metro Chicago Information Centre.

Temple, B., Janzen, B.L., Chad, K., Bell, G., Reeder, B. and Martin, L. (2008). The health benefits of a physical activity program for older adults living in congregate housing. *Canadian Journal of Public Health, Volume 88, Issue 1, Pages 36-40*.

Terry-McElrath, Y.M., O'Malley, P.M. (2011). Substance use and exercise participation among young adults: parallel trajectories in a national cohort-sequential study. *Addiction, Volume 106, Issue 10, Pages 1855-1865*.

Terry-McElrath, Y.M., O'Malley, P.M. and Johnston, L.D. (2011). Exercise and Substance Use Among American Youth, 1991-2009. *American Journal of Preventive Medicine, Volume 40, Issue 5, Pages 530-540*.

The California Center for Public Health Advocacy. (2009). *The Economic Costs of Overweight, Obesity, and Physical Inactivity Among California Adults*.

The Nottingham Trent University and Ecotec Research and Consulting. (2005). Access, participation and progression in the arts for young people on Detention and Training Orders. London: Arts Council England

Thijs, K.M., De Boer, A.G., Vreugdenhil, G., Van De Wouw, A.J., Houterman, S. and Schep, G. (2012). Rehabilitation using high-intensity physical training and long-term return-to-work in cancer survivors. *Journal of Occupational Rehabilitation, Volume 22, Issue 2, Pages 220-229*.

Thomas, S., Miller, C., Thomas, B., Tunstall, R., & Siggins, N. (2007). Mastering intrapreneurial behaviour for sustained socioeconomic development: A public service analysis of the south-east Wales heritage tourism attractions sector. *International Journal of Entrepreneurship and Innovation, Volume 8, Issue 1, Page 75*.

Thompson Coon, J., Boddy, K., Stein, K., Whear, R., Barton, J. and Depledge, M.H. (2011). Does participating in physical activity in outdoor natural environments have a greater effect on physical and mental wellbeing than physical activity indoors? A systematic review. *Environmental Science and Technology, Volume 45, Issue 5, Pages 1761-1772*.

Thompson, P.D., Buchner, D., Pina, I.L., Balady, G.J., Williams, M.A., Marcus, B.H., Berra, K., Blair, S.N., Costa, F., Franklin, B., Fletcher, G.F., Gordon, N.F., Pate, R.R., Rodriguez, B.L., Yancey, A.K. and Wenger, N.K. (2003). Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease: a statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity). *Circulation, Journal of the American Heart Association, Volume 24, Issue 3, Pages 3109-3116*.

Thompson, S., Aked, J., McKenzie, B., Wood, C., Davies, M. & Butler, T. (2011). *The Happy Museum: a tale of how it could turn out all right*. Stowmarket: Museum of East Anglian Life.

Tittlbach, S.A., Sygusch, R., Brehm W., Woll, A., Lampert, T., Abele, A.E. and Bös, K. (2011). Association between physical activity and health in German adolescents. *European Journal of Sport Science, Volume 11, Issue 4, Pages 283-291*.

- Tonts, M. (2005). Competitive sport and social capital in rural Australia. *Journal of Rural Studies*, Volume 21, Issue 2, Pages 137-149.
- Totten, M. (2007). *Access to Recreation for Low-Income Families in Ontario: The Health, Social and Economic Benefits of Increasing Access to Recreation for Low-Income Families*. Ontario Task Group
- Tranfield, D., Denyer, D. & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, Volume 14, Pages 207-222.
- Tripney, J., Thomas, J., Hovish, K. & Brown, C. (2012). *Methods used for the CASE database 2012 update*. Institute of Education, University of London.
- Upright, C. B. (2004). Social capital and cultural participation: spousal influences on attendance at arts events. *Poetics*, Volume 32, Issue 2, Pages 129-143.
- Vail, S.E. (2005). *Promoting the Benefits of Sport: A Collection of Peer-Reviewed Journal Articles and Reports*. Federal Provincial-Territorial Sport Committee.
- Van Dijk, M. H. (2012). *Learning through Art. The PEETA project and its value and possibilities for reintegration of prisoners in society*. (Thesis)
- van Mechelen, W., Collard, D.C.M., Chinapaw, M. and Verhagen, E.A.L.M. (2011). Magnitude and economic burden of sports and physical activity-related injuries in dutch 10-12 year old children. *British Journal of Sports Medicine*, Volume 45, Pages 310-384.
- VanSickle, J. (2012). The impact of physical activity and sport in the lives of women. *Journal of Physical Education, Recreation and Dance*. Volume 83, Issue 3, Pages 3-5.
- Vaughan, T., Harris, J., & Caldwell, B. (2011). *Bridging the Gap in School Achievement through the Arts*. The Song Room.
- Veliz, P. and Shakib, S. (2012). Interscholastic Sports Participation and School based Delinquency: Does Participation in Sport Foster a Positive High School Environment? *Sociological Spectrum: Mid-South Sociological Association*, Volume 32, Issue 6, Pages 558-580.
- Vermeulen, J. and Verweel, P. (2009). Participation in sport: bonding and bridging as identity work. *Sport in Society: Cultures, Commerce, Media, Politics*, Volume 12, Issue 9, Pages 1206-1219.
- Vinluan, J. D. (2005). After-school programs alter lives of at-risk youth. *Parks and Recreation*, Volume 40, Issue 8, Pages 12-15.
- Walker, C., Fleming, C., & Sherwood, K. (2003). *Arts Participation: Steps to Stronger Cultural and Community Life*. Urban Institute.
- Walker, C., Scott-Melnyk, S., & Sherwood, K. (2002). *Reggae to Rachmaninoff: How and Why People Participate in Arts and Culture. Building Arts Participation. New Findings from the Field*. Urban Institute.
- Walsh, R. (2011). Lifestyle and Mental Health. *American Psychologist*, Volume 66, Issue 7, Pages 579-592.

Warburton, D.E.R., Katzmarzyk, P.T., Rhodes, R.E. and Shephard, R.J. (2007). Evidence-informed physical activity guidelines for Canadian adults. *Canadian Journal of Public Health, Volume 98, Supplement 2.*

Warburton, D.E.R., Nicol, C.W. and Bredin S.S.D. (2006). Health benefits of physical activity: the evidence. *Canadian Medical Association Journal, Volume 174, Issue 6, Pages 801-809.*

Waring, A. and Mason, C. (2010). Opening doors: promoting social inclusion through increased sports opportunities. *Sport in Society: Cultures, Commerce, Media, Politics, Volume 13, Issue 3, Pages 517-529.*

Watkins, R. E. (1999). *A social psychological examination of the relationship between athletic participation and delinquent behaviour.* Thesis submitted in partial fulfilment of PhD, Carleton University, Ottawa.

Wavell, C., Baxter, G., Johnson, I., & Williams, D. (2002). *Impact Evaluation of Museums, Archives and Libraries: Available Evidence Project.* The Council for Museums, Archives and Libraries.

Wheelock, A. (1999). *Library Power Executive Summary: Findings from the National Evaluation of the National Library Power Program.* The University of Wisconsin at Madison School of Library and Information Studies and School of Education.

Wilson, D.M., Gottfredson, D.C., Cross, A.B., Rorie, M. and Connell, N. (2010). Youth Development in After-School Leisure Activities. *Journal of Early Adolescence, Volume 30, Issue 5, Pages 668-690.*

Wilson, S.J. and Lipsey, M.W. (2000). Wilderness challenge programs for delinquent youth: a meta-analysis of outcome evaluations. *Evaluation and Program Planning, Volume 23, Issue 1, Pages 1-12.*

Witt, P.A. and Caldwell, L. (2010). The Scientific Evidence Relating to the Impact of Recreation on Youth Development. In *The Rationale for Recreation Services for Youth: An Evidenced Based Approach.* Pages 32-43.

Wolf, S.L., Barnhart, H.X., Kutner, N.G., McNeely, E., Coogler, C. and Xu, T.(1996). Reducing frailty and falls in older persons: an investigation of Tai Chi and computerized balance training. Atlanta FICSIT Group. Frailty and Injuries: Cooperative Studies of Intervention Techniques. *Journal of the American Geriatrics Society, Volume 44, Issue 5, Pages 489-497.*

World Health Organization. (2004). *Global Strategy on Diet, Physical Activity and Health.*

Wright, D.R. and Fitzpatrick, K.M. (2006). Social Capital and Adolescent Violent Behavior: Correlates of Fighting and Weapon Use among Secondary School Students. *Social Forces, Volume 84, Issue 3, Pages 1435-1453.*

Wright, P., Harwell, R. and Allen, L. (1998). Project STRIDE: A unique summer intervention program for youth-at-risk. *Journal of Park and Recreation Administration, Volume 16, Issue 1, Pages 97-113.*

- Wright, R., John, L., Alaggia, R., & Sheel, J. (2006). Community-based Arts Program for Youth in Low Income Communities: A Multi-Method Evaluation. *Child and adolescent Social Work Journal, Volume 23, Issues 5-6, Pages 635-652.*
- Wright, R., John, L., Ellenbogen, S., Offord, D., Duku, E., & Rowe, W. (2006). Effect of a Structured Arts Program on the Psychosocial Functioning of Youth From Low-Income Communities Findings From a Canadian Longitudinal Study. *The Journal of Early Adolescence, Volume 26, Issue 2, Pages 186-205.*
- Wynaden, D., Barr, L., Omari, O. and Fulton, A. (2012). Evaluation of service users experiences of participating in an exercise programme at the Western Australian State Forensic Mental Health Services. *International Journal of Mental Health Nursing, Volume 21, Issue 3, Pages 229-235.*
- Xu, Q., Park, Y., Huang, X., Hollenbeck, A., Blair, A., Schatzkin, A. and Chen, H. (2010). Physical activities and future risk of Parkinson disease. *Neurology, Volume 75, Issue 4, Pages 341-348.*
- Yin, Z. and Moore, J.B. (2004). Re-examining the role of interscholastic sport participation in education. *Psychological Reports, Volume 94, Issue 3, Pages 1447-1454.*
- Yonas, M. A., Burke, J. G., Rak, K., Bennerr, A., Kelly, V., & Gielen, A. C. (2009). A Picture's Worth a Thousand Words: Engaging Youth in CBPR Using the Creative Arts. *Programme Community Health Partnership, Volume 3, Issue 4, Pages 349-358.*
- Yu. L., Dempsey. L., & Ormes, S. (1999). Community networking: development, potentials and implications for public libraries. *Journal of Librarianship and Information Science, Volume 31, Issue 2, Pages 71-83.*
- Zabriskie, R.B., Lundberg, N.R. and Groff, D.G. (2005). Quality of life and identity: the benefits of a community-based therapeutic recreation and adaptive sports program. *Therapeutic Recreation Journal, Volume 39, Issue 3, Pages 176-191.*
- Zeiser, K.L. (2011). Examining racial differences in the effect of popular sports participation on academic achievement. *Social Science Research, Volume 40, Issue 4, Pages 1142-1169.*